

**A SURVEY OF COMPOUNDS FROM THE
ANTIRADIATION DRUG DEVELOPMENT
PROGRAM OF THE U.S. ARMY MEDICAL
RESEARCH AND DEVELOPMENT COMMAND**

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September 1979

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**WALTER REED ARMY INSTITUTE OF RESEARCH
WASHINGTON, D.C.**

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DEDICATION

*This survey is dedicated to Dr. David P. Jacobus
and Dr. William E. Rothe whose warm encouragement
facilitated its writing and expedited its completion.*

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PREFACE

In the present survey of the Antiradiation Drug Development Program of the U.S. Army Medical Research and Development Command, an attempt has been made to assemble in one place all of the compounds that were synthesized along with the associated mouse test results and offer an interpretation of the biological data *vis a vis* the structures of the compounds. This edited body of data has been organized for quick and easy reference both for those working in the field and for the casual reader. It was not the intention to report on all of the work that was done in the Program. The arbitrary decision was made not to extend the survey to include results of indepth studies that were carried out on a number of the more interesting compounds; such studies could include, for example, determination of a dose reduction factor, duration of action and mechanism of the chemical antagonism of anti-radiation action. Results on the testing of selected compounds in large animals have also been omitted. Finally, results of the various preclinical pharmacology studies that were carried out to support the requests for exemptions to conduct clinical studies of drug tolerance, as well as the results of the tolerance studies, have also been omitted.

There are two principal parts of this survey. One, which may be considered the survey proper, is a large table simply entitled Survey. In it is summarized the results of the testing of all of the target compounds synthesized in the program as well as a small number of related gift compounds that seemed to be of sufficient interest to include. The other principal part, following the survey proper, is a discussion of structure-activity relationships among selected series of compounds along with 47 tables of associated data. The latter tables contain only a small portion of the compounds that are included in the Survey.

Many people contributed to the success of the program over its active years, not only those associated with it at the Walter Reed Army Institute of Research, but also those at the Headquarters, U.S. Army Medical Research and Development Command as well as those associated with the many contractors. Special mention must be made of Dr. David P. Jacobus whose initiative and inspiration provided the impetus for the program and who served as its technical director during its most active years. Succeeding Dr. Jacobus was Dr. William E. Rothe who directed the technical program until its termination in 1973.

The author is indebted to June A. Page, Larry J. Hooks, Sandra M. Simpson and Ruby N. Boyd for technical assistance in the collection of data for this survey and to Marie M. Grenan for assistance in the collection of biological data and consultation on their interpretation. Special thanks and acknowledgement is made to David P. Jacobus for consultation and suggestions for valuable inclusions in the survey.

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INTRODUCTION

In the spring of 1959 the U.S. Army Medical Research and Development Command initiated a program of drug development for chemoprophylactic agents that could protect troops against ionizing radiation. The technical part of the program was the responsibility of the Walter Reed Army Institute of Research and was initiated under the technical direction of Dr. David P. Jacobus. The quantitative biological data that were generated in the program were originally classified but the program was declassified in 1965.

Although there was a parallel in-house effort, the bulk of the chemical synthesis was carried out through research contracts with industry, research institutes and universities. Most of the biological testing and pharmacology was done in-house although it eventually became necessary to supplement the in-house efforts with appropriate contracts. The large number of chemicals and the large volume of chemical and biological data necessitated the development of computerized methods of handling (1,2,3,4).

The program was planned and organized in such a way that all of the elements necessary for modern drug development were phased in at appropriate times. Thus while rational synthesis and primary testing were emphasized at the outset of the program, there followed in timely succession the program elements of advanced screening in large animals, indepth studies on compounds of interest, preclinical pharmacological studies, formulation investigations, preparation and appropriate review of the necessary documentation for human tolerance studies, and, finally, human tolerance studies. A total of about 4400 target compounds were synthesized in the program. Five formal requests for new drug exemptions (INDs) were prepared and human tolerance studies were conducted on three of these.

Prior to the advent of the Army program there had accrued a considerable body of data that indicated the feasibility and desirability of such a study. The Atomic Energy Commission had evaluated the mechanism of action of ionizing radiation, characterized the syndromes associated with radiation mortality and sponsored studies on the mechanism of action of thiol derivatives in various rodents, microorganisms and *in vitro* cultures. Patt in 1949 (5) had shown that cysteine, administered before irradiation with x-rays, brought about a substantial reduction of radiation injury in rats. Two years later it was demonstrated that the cysteine analog, cysteamine (MEA), protected mice if administered before x-irradiation (6). Both of these compounds contain unsubstituted amino and thiol groups. In 1955 it was reported that S-2-amino-ethylisothiuronium bromide hydrobromide (AET) had good antiradiation activity (7) and, finally, in 1959 the good radioprotective properties of

2-aminoethylthiosulfuric (the Bunte salt of MEA) were reported (8). Also, by the time the program began, about 1500 compounds had been tested elsewhere, mainly at the U.S. Air Force Radiation Laboratory in Chicago (9). The best compounds from this group were those having a potential thiol group separated by 2 or 3 carbons from a basic nitrogen function.

In this same pre-program period, Eldjarn and Pihl (10) had provided a possible theoretical basis for the mechanism of action of the thiol compounds against radiation-induced radicals (indirect action) and against the radiation itself. They suggested that mixed disulfide formation of the protective thiol with essential thiols of the target molecule shields the latter by providing a non-lethal target for radiation-induced radicals and a source of electrons (the disulfide bond) for repair of an electron deficiency elsewhere in the molecule, both processes leading to a regeneration of the original essential thiol.

Many studies had been conducted on methods of modifying the response to sub-lethal radiation as opposed to fully lethal radiation. Survival against sub-lethal radiation could be improved by modification of host defense. Thus, non-physiological materials can stimulate the reticuloendothelial system to produce leucocytes or enhance the defense against bacterial invasion (antibiotics) and can offer very significant protection against mid-lethal radiation. Partial shielding will also offer protection. In general, where appropriate experiments have been conducted, such manipulations work in concert with the aminothiols, *i.e.*, reduction of lethal radiation to mid-lethal by administration of an aminothiol would provide an animal that could be effectively treated with antibiotics. On the other hand, these host procedures were relatively ineffective in animals exposed to fully lethal radiation. Because the objective of the program was to develop antiradiation drugs rather than modifying host defense, almost all of the radiation experiments and test procedures were conducted at fully lethal radiation. As pointed out in the description of the biological methods, none of the 44,000 mice used as controls for the approximately 4400 compounds tested survived and none showed early deaths.

The pivotal decision to initiate the Army Program was made after Jacobus and Dacquisto (9) found that an intravenous administration of a mixture of compounds containing at least two mercaptans, a methemoglobin-producing agent and a cytochrome inhibitor could protect dogs exposed to approximately twice a lethal dose of radiation. The protected dogs received no post-exposure care and maintained white counts sufficient to offer protection against disease. These experiments raised the possibility that such protective activity could be extended to higher animals.

The studies initiated by Patt and continued by others demonstrated that the aminothiols had the ability to reduce irradiation injury by a factor of approximately 2. That is to

say, the apparent dose of radiation would appear to be half of what the animal actually received. By a judicious selection of the dose, it was then possible to demonstrate that an animal receiving sufficient radiation to cause the CNS death syndrome would have the apparent dose of radiation cut in half so that the fatal syndrome would then be the GI syndrome. Likewise, the GI syndrome could be reduced to the bone marrow syndrome and the bone marrow syndrome could be converted to survival. These dose reductions in mice were subsequently repeated in the Army program using both monkeys and dogs. In the Army program, therefore, it was considered that any compound effective against lethal radiation would offer a comparable dose reduction factor for a super-lethal radiation. Dose reduction factors as conventionally determined in radiobiology were very rarely studied in the Army program. However, the reader may obtain an approximation of the magnitude of the dose reduction by noticing that any compound that received an antiradiation rating of "+", indicating at least 50% survival at the dose tested reduces the apparent dose of radiation from the LD₁₀₀ of 800r to at least the LD₅₀ of 600r. Therefore at the dose tested the compound would have a dose reduction factor (DRF) of at least 1.3 (800/600). Many of the compounds tested allowed 100% survival at 800r. Since the LD₁₀ of radiation for mice in the absence of drug was approximately 450r the DRF for compounds allowing 100% survival was at least 1.8 (800/450). These relationships can be appreciated from an examination of the following data showing actual dose reduction factors determined for WR-2721 [H₂N(CH₂)₃NHCH₂CH₂SPO₃H₂] and percent survival of WR-2721-treated mice subjected to otherwise lethal radiation. The compound was administered 15 minutes pre-irradiation, IP, for both sets of data.

Mortality Data on WR-2721-Treated Mice			
Dose (mg/kg)	Jackson Lab Data ¹	Survey Data	
	(DRF)	%Survival	Rating ³
75	n.d. ²	80	+
150	1.81	100	+,+
200	2.18	n.d.	
250	2.27	n.d.	
300	n.d.	100	+,+,+
350	2.42	n.d.	
500	2.71	n.d.	
600	n.d.	100	+,+,+,+

¹The Jackson Laboratory, Final Report 1 August 1968 - 31 July 1969, Contract No. DA-49-193-MD-2289.

²n.d. = not determined.

³The rating is that used in the Survey proper and explained in the introduction to the Survey. Only a rating of "+,+,+,+" for a dose of 600 mg/kg, which would include the lower doses, would appear in the Survey and would indicate that a dose level of 1/8th of 600 mg/kg gave at least 50% survival.

The background described established the setting for the program. Aminoalkylthiols, actual or potential, were considered to be the only compounds offering "true" radioprotection and even for these, there existed the possibility that their mechanism of action could be through production of anoxia. It was not the objective of the program to obtain compounds of this class with DRFs greater than 2-3 since it was felt that they had only one mechanism of action and might have a DRF limit of 2-3. Rather it was to obtain a compound that was capable of conferring significant protection at doses considerably below the highest tolerated level such as was required by the original aminoalkylthiols. In other words, a compound with a larger factor of safety (therapeutic index) was desired. From the practical standpoint, a small effective dose, comparable in weight with those employed in conventional therapy, and having a low incidence of side effects was desired. Finally, the ideal drug should be effective by oral administration.

Toward these ends the primary test was designed to measure two parameters precisely, viz., the effectiveness of a compound at the highest tolerated dose (semiquantitative DRF) and the ability of the compound to confer protection when administered at less than this dose. Normally, only one test of a compound was made if the compound exhibited no activity in a valid experiment as determined by the response of the control animals. When a compound exhibited interesting activity, the activity was confirmed, the compound was retested at lower doses and, in addition, usually tested by oral administration. The very best compounds were ultimately tested in dogs and/or monkeys although formal dose reduction studies were not conducted.

As mentioned earlier, the main thrust of the rational synthesis effort in the program was directed toward aminoalkylthiols and derivatives. Adherence to the thiol-blocking concept, discussed elsewhere in this survey, dictated the synthesis of compounds with several thiol-blocking groups for each parent compound synthesized. In retrospect, this was a sound approach but it required a substantial portion of the total synthesis effort and to some extent limited the number and variety of amine-function derivatives that could be synthesized. By exploring a large variety of thiol-blocking groups, the synthesis program can be credited with firmly establishing the worth and utility of a select few and, in addition, obtaining a good appraisal of the worth of a variety of classes of moieties attached to the amino function. The large number of chemical publications resulting from the synthetic effort attests to the contribution the program made to the chemistry of aminothiols.

It was realized that it would be desirable to uncover new classes of active compounds. Toward this end screening of selected compounds outside of the aminoalkylthiol type was carried on but no new classes emerged, even though somewhat over 1500 were tested; the

bulk of this random screening was carried out by the U.S. Air Force Radiation Laboratory with support from the U.S. Army Medical Research and Development Command for the last few years. Late intermediates in certain syntheses were also sometimes tested. Combinations of what were thought to be significant groupings were also tried. Thus, the sodium sulfinate group, $-\text{SO}_2\text{Na}$, conferred special antiradiation properties on the $[-\text{S}(\text{CH}_2)_4\text{SO}_2\text{Na}]$ moiety compared to the unsubstituted moiety $[\text{S}(\text{CH}_2)_3\text{CH}_3]$ when used as a thiol-blocking group. Combining this moiety in the form of a trisulfide (WR 168,643, Table 47) yielded a highly active antiradiation compound that was atypical in that the molecule contained no nitrogen. The theoretical significance and potential utility of this finding have yet to be explored. Other "no-nitrogen" compounds are also active (Table 47). This class of compounds deserves the attention of future investigators. Other classes that have probably not been adequately explored are the amidine and aminoalkylamino derivatives.

The program was originally designed to solve what was believed to be a relatively straightforward problem in medicinal chemistry, *i.e.*, to explore in a logical manner the limits of the chemical lead, to test the best compounds resulting from the exploration in higher species and, after appropriate safety studies, to test the best compounds in man. As it turned out, this simple medicinal chemistry format was not of sufficient sophistication to allow the unequivocal selection of a radioprotective compound with enough of a safety margin to be attractive for full development. The difficulty lay in the fact that neither antiradiation action nor toxicity necessarily progressed in a simple way with logical structural variations but could be highly specific. This finding was more surprising in view of the simplicity of the original lead. Two examples can illustrate the problem. In the simple alkylaminoethylthiosulfuric acids there are three separate peaks of activity as the alkyl chain is lengthened and similarly two peaks of activity in the corresponding thiol series. The second example is furnished by the aminoalkylaminoethyl derivatives where the active and adjacent inactive compounds of the series were studied for a toxic side effect, *viz.*, *alpha* adrenergic blockading activity. Highly specific and reversible *alpha* adrenergic blockade of vascular smooth muscle, but not of intestinal smooth muscle, was dependent upon the number of methylene groups between the amine functions. Parenthetically, it may be mentioned that two of these highly selective *alpha* adrenergic blocking compounds were also shown to repress and reverse induced hemorrhagic shock in three species of animals and to prevent the deleterious hemodynamic effects of otherwise lethal doses of endotoxin; these compounds, 5-amino-pentylaminoethylphosphorothioic acid, WR-2823, and its symmetrical disulfide, WR 149,024, are presently being developed for use in clinical emergencies. The adrenergic selectivity of these thiol

derivatives is to be contrasted with a non-selective *alpha* adrenergic blockading activity of the one-armed nitrogen mustards now used in clinical practice. These *alpha* blockading compounds demonstrated that simple thiols containing equally simple constituents would interact with some but not all physiological thiols and that these interactions could be controlled by relatively distant but simple structural modifications. Thus the program discovered and was at the same time bedeviled by the different physiological effectiveness of these structurally similar compounds although, in a sense, they were designed with the expectation that they would interchange reversibly with the physiological thiols of the active sites or with disulfide bonds. The problem might have been anticipated from the mechanism of action studies of Eldjarn and Pihl (10). Every series that was studied for phenomena other than antiradiation activity (histamine release and hypotension, cardiotoxicity, hypertension, convulsions) suggested the compounds did have specificity in ways that were not anticipated. Although pharmacological specificities did not necessarily correlate with radioprotection, their exploration will be necessary to guide any future development of a compound with appropriate physiological tolerance. Sulfhydryl-dependent functions are of great physiologic importance and the compounds in this program may offer the beginning of a unique approach to selective modification of some of these functions.

With the exceptions noted earlier, this report summarizes the program through 1973 when it was terminated. The most active compounds were generally effective by intraperitoneal administration at a quarter of the highest tolerated dose and, on a weight basis, in the 5-10 mg/kg range. This range is still at least an order of magnitude away from doses employed in conventional therapy but, in turn, is an order of magnitude improvement over the doses required at the time the program started. Most of the compounds were markedly less effective with oral administration and even the most active orally in the mouse were inactive orally in the monkey possibly because of poor absorption. Studies to surmount these difficulties, either by effective formulation or structure design, are needed. For easy reference to compounds that may provide promising areas for future research two special tables are provided: those compounds that were effective (a rating of +) when administered at one quarter of the highest tested dose are listed in Table 48 and those that were effective at 15 mg/kg or below are listed in Table 49.

1. A. Feldman, D.B. Holland and D.P. Jacobus, J. Chem. Doc. 3, 187 (1963).
2. D.B. Holland, D.P. Jacobus, A. Feldman and B.R. Moberly, Control Eng. 11, 60 (1964).
3. D.P. Jacobus, D.E. Davidson, A.P. Feldman and J.A. Schafer, J. Chem. Doc. 10, 135 (1970).
4. E.H. Eckerman, J.F. Waters, R.O. Pick and J.A. Schafer, J. Chem. Doc. 12, 38 (1972).
5. H.M. Patt, E.P. Tyree, R.L. Straube and D.E. Smith, Science 110, 212 (1949).
6. Z.M. Bacq, A. Herve, J. Lecompte, P. Fisher, J. Blavier, G. Dechamps, H. LeBihan and P. Rayet, Arch. Intern. Physiol. 59, 442 (1951).
7. D.G. Doherty and W.T. Burnett, Jr., Proc. Soc. Exp. Biol. Med. 89, 312 (1955).
8. B. Sorbö, Arch. Biochem. Biophys. 98, 342 (1962).
9. D.P. Jacobus and M.P. Dacquisto, Mil. Med. 126, 698 (1961).
10. L. Eldjarn and A. Pihl, J. Biol. Chem. 225, 499 (1957).

METHODS

Compounds

The synthetic procedures for all of the compounds that were synthesized under Army support are given in the respective references in the Survey.

Evaluation of Compounds

An adequate description of the test system was usually not included in the chemistry publications. For this reason it is included in this survey.

Female mice of the Walter Reed Bagg Swiss or Inbred Charles River (ICR) strains, 5-6 weeks old and weighing 21-25g, were randomly assigned to treatment groups. An estimation of the toxicity of each compound to be tested for antiradiation activity, *i.e.*, a determination of the approximate LD_{50} (ALD_{50}), was obtained in separate experiments prior to irradiation. Toxicity estimations were based upon animal survival over a ten-day observation period following intraperitoneal or oral administration of each agent in graded doses using 10 mice at each dose level. Adverse symptomatology was noted and, in addition, each mouse was subjected to a post mortem examination. The highest dose of each compound administered for antiradiation testing was about two thirds of the ALD_{50} unless a lower dose was indicated by adverse symptomatology or pathologic changes; the selected doses of each compound were administered 15-30 minutes before exposure to lethal whole body irradiation. →

Compound formulations were freshly prepared for administration prior to use. The compounds were, depending on their solubility, either dissolved in physiological saline solution or were homogenized in a glass tissue grinder in a suspending medium of physiological saline solution containing 0.2% methyl cellulose (4000 centipoise) and 0.4% Tween-80. The suspensions were exposed to an ultrasonic apparatus for approximately two minutes to insure uniform particle size. The pH range of the solutions or suspensions was adjusted to 5-8, if necessary, provided the compound was stable at the adjusted pH.

Irradiation of the mice was performed utilizing either of two sources: 300 KCP GE Maxitron Unit, with radiation factors of 20 ma, HVL 2 mm Cu, TDS 85 cm, dose rate in air 45 r/min or a specially designed Co-60 irradiator, which contained 1200 curies of Co-60, half above and half below the radiation chamber, with a dose rate range from 100r - 50r/min over a five year period.

Forty mice were exposed in a perforated Lucite dish 20 inches in diameter which rotated continuously during exposure. Control mice injected with only the vehicle used for the

particular drug evaluation were irradiated simultaneously with each treated group and thereafter housed jointly eight to a cage.

The mice were given food and water *ad libitum*. The drinking water contained 10-15 ppm of chlorine to suppress the growth of *Pseudomonas aeruginosa*. The principles of laboratory animal care as promulgated by the National Society for Medical Research were observed.

→ Mortality was tabulated for a 30-day period for each individual animal and all data computerized. Under our conditions, approximately 800r x-ray and 1000r Co-60 gamma irradiation were equally lethal (LD-100₃₀), all control animals dying between the tenth and twenty-first days following exposure. *JS/KE*

Molecular Formula

Compounds are listed in the table in molecular formula order, the molecular formula being recorded in accordance with the system used in Chemical Abstracts.

Alkali and alkaline earth metal salts of acids are recorded as the molecular formula of the free acid; other metal salts and chelates are recorded as such, all elements being included in the molecular formula. Ammonium and amine salts of acids are also recorded as the free acids. Acid salts of amines, such as hydrochlorides, are recorded as the free amine. Quaternary, sulfonium and analogous salts are recorded as such.

The molecular formula of a polymer is recorded as that of the monomer and a copolymer as the combination of the monomers on a 1 : 1 basis, thus $(-\text{CH}_2\text{CH}-)_n$ would be found as $\text{C}_4\text{H}_6\text{OS}$ and $(-\text{CH}_2\text{CH}-)_n \cdot (-\text{CH}_2\text{CH}-)_n$ would be found as $\text{C}_{10}\text{H}_{18}\text{N}_2\text{O}_2\text{S}$.

$$\begin{array}{c} \text{SCOCH}_3 \\ | \\ (-\text{CH}_2\text{CH}-)_n \end{array} \cdot \begin{array}{c} \text{CONH}_2 \\ | \\ (-\text{CH}_2\text{CH}-)_n \end{array} \text{SCON}(\text{C}_2\text{H}_5)_2$$

The Walter Reed Number Index will facilitate the finding of a compound in the table if only the Walter Reed number (WR number) is known.

WR Number

The WR (Walter Reed) number is an accession number that is assigned to each unique structure received. Compounds with identical molecular formulas are entered in ascending WR number.

Structure and Configuration

When possible to do so without sacrificing clarity, structures have been drawn linearly, using appropriate parentheses and brackets, in order to save space. Rings have been drawn and aromatic rings are represented with appropriate double bonds.

Compounds containing asymmetric centers are designated by the letters D, L, or DL when the stereoisomer is known; unless specifically so designated it should be assumed that the compound is the racemic mixture. The configuration of sugar derivatives is designated either by Haworth projection formulas or descriptor terms such as *gluco*, *galacto*, etc. *Cis* and *trans* isomers are designated by the appropriate descriptor term.

Although many of the compounds exist as inner salts, e.g., the aminoalkylthiosulfuric acids, they are recorded as non-ionic. The quaternary and sulfonium salts, however, are recorded as a cation and anion.

Salt Form

The numbers in the Salt Form column refer to the corresponding numbers in the table entitled Salts and Other Forms of Compounds Tested; hydrates and solvents are included in this table. The salt form denotes the form in which the compound was received and tested.

Antiradiation Activity

Data for both intraperitoneal (I.P.) and oral (P.O.) administration of compounds are given when available. The efficacy of a compound is measured by its ability to protect mice against a dose of ionizing radiation that would otherwise be lethal, protection being defined as a 30 day survival. The grading of protective effect against fully lethal radiation is expressed according to the following arbitrary scale: 0 to 19% survival = 0; 20-49% survival = $\pm$; 50-100% survival = +. The precision of the test system does not warrant a narrower interpretation of the data. Occasionally compounds were tested using a sublethal dose of radiation in which case protection was defined as a statistically significant increase in the number of treated mice that survived versus the controls. The rating of such a statistically significant increase is indicated by the letter "S". If there is no significant difference when tested at a sublethal radiation the rating given is simply zero, no reference being made to the degree of protection or to the fact that the dose of radiation was sublethal.

After the highest dose of a compound was selected for antiradiation testing, as explained under Methods, lower doses were arbitrarily set by successively reducing each dose by one half. A rating, as explained above, is given for each dose tested but only the highest dose is recorded in the Survey and other tables since the lower doses that were used are obvious. Very early deaths, *i.e.*, at four days or fewer, are attributed to toxicity of the compound, the effect becoming apparent in the presence of the added stress of radiation. Such a toxic effect is indicated by a (T) following the rating symbol. This combined toxic effect is occasionally manifested in the form of survivors at fractional drug doses but none at the top dose. For this reason the data presented always include a rating for one dose below the lowest dose that caused early deaths. The rating system can be illustrated using the data for compound WR-176,241, $\text{H}_2\text{N}(\text{CH}_2\text{OH})_2\text{CH}_2\text{SPO}_3\text{H}_2$, which shows good activity. At a dose of 1000 mg/kg, intraperitoneally, the rating is given as +(T),+,+, $\pm$ which means that 50% or more of the mice survived with a drug dose of 1000 mg/kg but there were some early deaths; 50% or more of the mice survived following doses of 500 mg/kg or 250 mg/kg and between 20% and 49% of the mice survived after a dose of 125 mg/kg. Since no rating was given for a dose below 125 mg/kg it can be assumed that the compound was not tested at that level.

When tested orally at 1000 mg/kg the indicated rating is 0,± which means that there were fewer than 20% survivors at a dose of 1000 mg/kg, whereas, there were between 20% and 49% survivors at a dose of 500 mg/kg. While no early deaths were noted, the increase in the number of survivors at the lower dose, compared to the higher, probably reflects the effect of the combined insults.

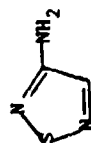
Although expressing the dose of compound on a molar rather than a milligram basis would often allow a more refined comparison of activity, the decision was made to retain the milligram basis because the drug doses were selected on a milligram basis and the actual size of a dose is better appreciated and compared from the practical standpoint. The doses of the compounds tested, as recorded in the table, refer to the free base or non-salt form of the compound.

References

The last column in the table gives a reference to the synthesis of the compound, if available, provided the compound was synthesized as part of the Army's Antiradiation Drug Development Program. Primary references, publications and patents, are given if possible. If the synthesis of the compound has not been published, a report is referenced. Generally a report will also be referenced, if the compound is mentioned only in a patent. If the synthetic procedure is not available the source or submitter of the compound is referenced. No attempt has been made to obtain from the open literature the procedures for the synthesis of gift compounds; rather, the source or submitter is acknowledged.

S U R V E Y

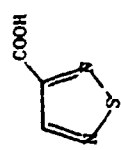
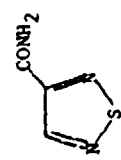
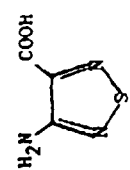
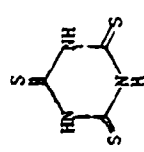
Summary of Antiradiation Activity

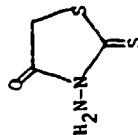
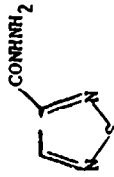
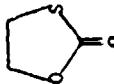
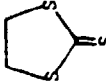
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
H ₃ NO ₃ S ₂	132806	H ₂ NSSO ₃ H	42,57	600	0			1
H ₄ NO ₂ PS	84138	H ₂ NP(O)(OH)SH	47	10	+,+,0	150	+	2
CH ₂ S ₃	86	(HS) ₂ CS	56	60	0			3
CH ₄ N ₂ S ₂	701	H ₂ NNHC(S)SH	76	5	0			4
CH ₄ O ₂ S	2841	CH ₃ SO ₂ H	57	2000	0(T),0			5
CH ₄ O ₂ S ₂	156	CH ₃ SSO ₃ H	55	1000	0			2
CH ₆ NO ₂ PS	127016	CH ₃ NHP(O)(OH)SH	63	12.5	+,+,0	200	+(T)	6
C ₂ H ₃ NO ₃ S ₂	7471	NCCH ₂ SSO ₃ H	42,57	25	+(T)	80	0(T),0	7
C ₂ H ₃ N ₃ S	669		1	250	0(T),0			8

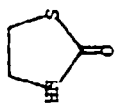
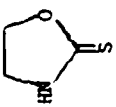
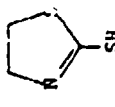
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_2H_3N_3S_2$	180			1000	~(T), 0			2
$C_2H_4N_2O_5S$	987	$H_2N(SO_2NHCOCOOH)$	56	444	0			8
$C_2H_4N_4O_2S$	1163			444	0			8
C_2H_5NOS	145	H_2NCOCH_2SH		100	0			9
C_2H_5NOS	766	H_2NCH_2COOH		1000	0			9
$C_2H_3N_3S_2$	22047	$H_2NCSNHCSNH_2$		100	0			3
$C_2H_6N_2OS$	384	$H_2NNHCOCH_2SH$		150	0			9
$C_2H_6N_2OS$	103582	$CH_3NHCSNH_2OH$		1	0			3

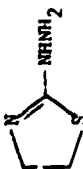
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_2H_6N_2O_3S_2$	1551	$H_2NC(=NH)CH_2SSO_3H$		50	+,+,0	150	+,+	10
$C_2H_6N_2S$	666	$CH_3NHCSNH_2$		2000	+			11
$C_2H_6N_2S$	1091	$H_2NC(=NH)SCH_3$	24	150	+			12
$C_2H_6N_2S$	76842	$H_2NC(=NH)CH_2SH$	1	24	+,+,0	80	+(T),+,+	13
$C_2H_6N_2S_2$	2288	$H_2NNHC(S)SCH_3$		2	0			14
$C_2H_6N_4S$	1224	$H_2NC(=NH)NHCSNH_2$	14	900	0			3
$C_2H_6N_4S_2$	540	$H_2NC(=NH)SSC(=NH)NH_2$	7	100	0			11
$C_2H_6N_4S_2$	1761	$H_2NCSNNHCSNH_2$		3160	0			15
C_2H_6OS	15504	$HOCH_2CH_2SH$		320	+(T),0			3
$C_2H_6O_3S_4$	2852	$HO_3SSCH_2CH_2SSO_3H$	44,58	500	0			11
C_2H_7NOS	3140	$H_2NOCH_2CH_2SH$	1	100	0			16

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₂ H ₇ NO ₂ Se	2695	H ₂ NCH ₂ CH ₂ Se(O)OH		10	0, (T), 0			17
C ₂ H ₇ NO ₃ SSe	1878	H ₂ NCH ₂ CH ₂ SeSO ₃ H		10	0			17
C ₂ H ₇ NO ₃ S ₂	361	H ₂ NCH ₂ CH ₂ SSO ₃ H		350	+, +	1000	+, 0	18
C ₂ H ₇ NO ₃ S ₃	157113	H ₂ NCH ₂ CH ₂ SSSO ₃ H		200	+, +			19, 210
C ₂ H ₇ NS	347	H ₂ NCH ₂ CH ₂ SH	1	150	+, +, 0	300	+, +, 0	3
C ₂ H ₇ NSe	2853	H ₂ NCH ₂ CH ₂ SeH	1	5	0			17
C ₂ H ₇ N ₂ O ₃ PS	108250	H ₂ NC(=NH)CH ₂ SPO ₃ H ₂	45, 57	75	+(T), +	75	+, +, 0	13
C ₂ H ₇ N ₃ S	2330	H ₂ NNHC(=NH)SCH ₃	10	20	0(T), 0			14
C ₂ H ₈ NO ₃ PS	638	H ₂ NCH ₂ CH ₂ SPO ₃ H ₂	57	400	+, +, +, 0	500	+, 0	21
C ₂ H ₈ N ₂ O ₂ S	3281	H ₂ NCH ₂ CH ₂ SO ₂ NH ₂	1	600	0			22

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_3H_2N_2O_2S$	709			1000	0			8
$C_3H_3N_3OS$	731			300	0			8
$C_3H_3N_3O_2S$	710			1000	0			8
$C_3H_3N_3S_3$	1			200	0(T, C)			23

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_3H_4N_2OS_3$	237			2.5	0			3
$C_3H_4N_4OS$	854			50	0			149
$C_3H_4O_2S$	2031			250	0(T), 0			12
$C_3H_4S_3$	387			400	0			3

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C_3H_5NOS	2017			375	0(T)			24
C_3H_5NOS	2514			500	0			15
$C_3H_5NO_3S_2$	563	$NCCH_2CH_2SSO_3H$	5/	200	0			25
$C_3H_5NS_2$				800	0(T), 0			3
$C_3H_6N_2OS$	80844			800	0(T), 0			6

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₃ H ₇ NS ₂	181630	(CH ₃) ₂ NCSSH	57	1000	±, 0			30
C ₃ H ₇ NS ₃	48	H ₂ NCH ₂ CH ₂ SC(S)SH		400	+(T), ±, 0	500	±	31, 32, 33
C ₃ H ₇ N ₃ S	1849		1	1	0			34
C ₃ H ₈ N ₂ OS	161	HOCH ₂ CH ₂ SC(=NH)NH ₂	6	200	0			36
C ₃ H ₈ N ₂ OS	261	H ₂ NCONHCH ₂ CH ₂ SH		400	±, 0			36
C ₃ H ₈ N ₂ OS	346	H ₂ NCOCH(NH ₂)CH ₂ SH	1	1050	±(T), 0(T), 0			9
C ₃ H ₈ N ₂ OS	1042	HSCH ₂ CH ₂ CONHNH ₂	36	250	0			36
C ₃ H ₈ N ₂ OS	1532	CH ₃ CH(SH)CONHNH ₂		200	0			9
C ₃ H ₈ N ₂ OS	2028	H ₂ NC(=NH)SCH ₂ CH ₂ OH	35	187	0			12
C ₃ H ₈ N ₂ OS	117404	H ₂ NCSNHCH ₂ CH ₂ OH		400	0			11

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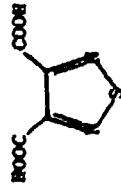
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_3H_8N_2OS_2$	162458	$HOCH_2CH_2SSC(=NH)NH_2$	1	15	0	250	0	11
$C_3H_8N_2O_3S_2$	179	$HO_3SCH_2CH_2SC(=NH)NH_2$		350	0			11
$C_3H_8N_2O_3S_2$	1552	$H_2NC(=NH)CH(CH_3)SSO_3H$		100	+(T)			10,37
$C_3H_8N_2O_3S_2$	1757	$CH_3NHC(=NH)CH_2SSO_3H$		75	±,0	300	0	10,37
$C_3H_8N_2O_3S_2$	1964	$H_2NC(=NH)CH_2CH_2SSO_3H$		200	+,±	800	+(T),+,+,±	38
$C_3H_8N_2O_3S_2$	2325	$H_2NC(=NH)SCH_2CH_2SSO_3H$		200	0			11
$C_3H_8N_2O_4S_2$	2180	$H_2NCONHCH_2CH_2SSO_3H$	55	1000	0			39
$C_3H_8N_2S$	539	$CH_3CH_2SC(=NH)NH_2$	6	250	+(T)	500	+	11
$C_3H_8N_2S$	2106	$H_2NC(=NH)CH_2CH_2SH$	1	125	+,±			38
$C_3H_8N_2S_2$	386	$(CH_3)_2NNHCSSH$	42,57	150	0(T),0			40

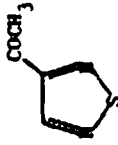
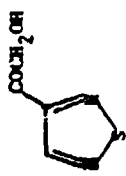
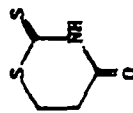
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I. P.		P. O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₃ H ₈ N ₂ S ₂	848	CH ₃ SCH ₂ SC(=NH)NH ₂	1	200	0			41
C ₃ H ₈ N ₂ S ₂	1476	H ₂ NCH ₂ CH ₂ SC(S)NH ₂	5	800	+(T)			4
C ₃ H ₈ N ₂ S ₂	2333	H ₂ NNHC(S)SCH ₂ CH ₂		5	0			14
C ₃ H ₈ N ₂ S ₂	37710	H ₂ NCSNHCH ₂ CH ₂ SH		250	+(T), 0(T)	500	+	42
C ₃ H ₈ OS ₂	132725	HSCH ₂ CHONCH ₂ SR		10	0			43
C ₃ H ₉ O ₃ S ₃	88	HSCH ₂ CH(SH)CH ₂ SO ₃ H	57	600	+, 0	4000	0(T)	11
C ₃ H ₈ S ₃	174	HSCH ₂ CHSRCH ₂ SR		10	0			11
C ₃ H ₉ NCS	2910	H ₂ NOCH ₂ CH ₂ CH ₂ SH	1	20	0			16
C ₃ H ₉ NO ₂ S ₂	182	H ₂ NCH ₂ CH ₂ SSO ₂ CH ₃	6	25	0			40
C ₃ H ₉ NO ₂ S ₂	2644	CH ₃ SO ₂ NHCH ₂ CH ₂ SH		200	0			39
C ₃ H ₉ NO ₃ S	1152	H ₂ NCH ₂ CH ₂ CH ₂ SO ₃ H		800	0			25

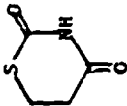
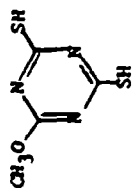
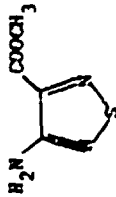
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₃ H ₅ NO ₃ S	2225	H ₂ NCH ₂ CH(CH ₃)SO ₃ H		1000 0				44
C ₃ H ₉ NO ₃ S ₂	258	CH ₃ NHCH ₂ CH ₂ SSO ₃ H		300 +, ±, 0				23
C ₃ H ₉ NO ₃ S ₂	363	H ₂ NCH ₂ CH ₂ CH ₂ SSO ₃ H		300 0				18
C ₃ H ₉ NO ₃ S ₂	1484	H ₂ NCH(CH ₃)CH ₂ SSO ₃ H		350 +				45
C ₃ H ₉ NO ₃ S ₂	2516	H ₂ NCH ₂ CH(CH ₃)SSO ₃ H		800 0(T), 0				45
C ₃ H ₉ NO ₄ S ₂	1623	H ₂ NCH ₂ CHOHCH ₂ SSO ₃ H		1000 0				46
C ₃ H ₉ NO ₄ S ₂	1966	HOCH ₂ CH(NH ₂)CH ₂ SSO ₃ H		200 0				46
C ₃ H ₉ NO ₄ S ₂	2145	H ₂ NCH ₂ CH(CH ₂ OH)SSO ₃ H		900 0				46
C ₃ H ₉ NS	166	H ₂ NCH ₂ CH(SH)CH ₃	1	300 +(T), ±, 0				47
C ₃ H ₉ NS	186	H ₂ NCH(CH ₃)CH ₂ SH	1	175 ±, 0				47, 48

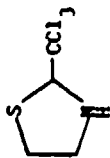
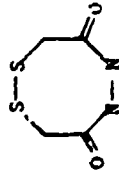
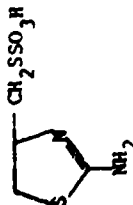
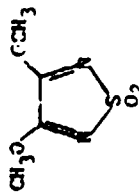
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I. P.		P. O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₃ H ₉ NS	679	H ₂ NCH ₂ CH ₂ CH ₂ SH		100	0(T).0			49
C ₃ H ₉ NS	2113	CH ₃ NHCH ₂ CH ₂ SH	1	400	0(T).+,0	500	0	12
C ₃ H ₉ NS	2452	d-H ₂ NCH ₂ CH(CH ₃)SH	1	200	±,0			50
C ₃ H ₉ NS	2470	l-H ₂ NCH ₂ CH(CH ₃)SH	1	200	±,0			50
C ₃ H ₉ NS ₂	2082	H ₂ NCH(CH ₂ SH) ₂	1	8	0			29
C ₃ H ₉ NS ₂	2623	H ₂ NCH ₂ CH(SH)CH ₂ SH	1	50	0(T).0			48
C ₃ H ₉ N ₃ OS	629	H ₂ NNHCOCH(NH ₂)CH ₂ SH		250	0			9
C ₃ H ₉ N ₃ OS	1550	H ₂ NCH ₂ CH ₂ SC(=NH)NH ₂	7	250	+(T)			51
C ₃ H ₉ N ₃ OS	2377	H ₂ NNHCOHCH ₂ CH ₂ SH		50	0			39
C ₃ H ₉ N ₃ O ₃ S ₂	1087	H ₂ NC(=NH)NHCH ₂ CH ₂ SSO ₃ H		225	±,0	500	±, (T)	52
C ₃ H ₉ N ₃ S	298	H ₂ NCH ₂ CH ₂ SC(=NH)NH ₂	7	225	+,+,±	250	±	11

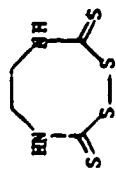
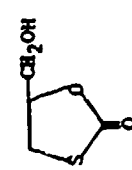
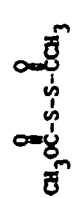
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_3H_9N_3S$	1494	$H_2NCH(-NH)SCH_2CH_3$	6	30	0			26
$C_3H_9N_3S$	1574	$H_2NCH(-NH)NCHCH_2CH_2SH$	24	180	+0			53
$C_3H_9N_3S$	1963	$(CH_3)_2NCHCSNH_2$		250	0(T)			34
$C_3H_9N_3S_2$	117247	$H_2NCHCH_2CH_2SSC(-NH)NH_2$	28	120	+(T), 0	600	+	54
$C_3H_9N_3Se$	1704	$H_2NCHCH_2CH_2SeC(-NH)NH_2$	7	25	0			55
$C_3H_9NO_2PS$	126453	$CH_3CH_2CH_2NHP(O)(OH)SH$	63	25	+, ±	150	0	43
$C_3H_9NO_3PS$	4468	$H_2NCH(CH_3)CH_2SPO_3H_2$		400	+0	1000	0	243, 56
$C_3H_9NO_3PS$	4469	$CH_3NCHCH_2CH_2SPO_3H_2$		600	+(T), +0	1000	+	243, 56
$C_3H_9NO_3PS$	35978	$H_2NCHCH_2CH_2SPO_3H_2$		125	0(T), 0			57
$C_3H_9NO_4PS$	77913	$H_2NCHCH_2CH_2(OH)CH_2SPO_3H_2$	54	600	+(T), +0	1500	+, ±	58

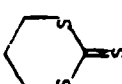
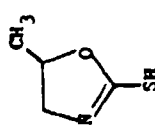
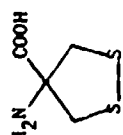
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_3H_{10}N_2S$	81861	$H_2NH(CH_3)CH_2CH_2SH$		20	0			59
$C_3H_{10}N_2S$	133570	$H_2NCH_2CH(NH_2)CH_2SH$	7	200	$\pm, 0$			60
$C_3H_{10}N_2O_3PS$	176240	$H_2NC(=NH)NHCH_2CH_2SPO_3H_2$	41	200	$+, +, +, 0$	300	$+, +, \pm, 0$	61
$C_3H_{10}N_2O_3PS$	180152	$H_2NC(=NH)NHCH_2CH_2SPO_3H_2$	42, 53	200	$+, +, +, 0$	300	$+, +, \pm$	61
$C_3H_{11}N_2O_3PS$	114391	$H_2NCH_2CH(NH_2)CH_2SPO_3H_2$		400	$+, +, 0$	800	0	62
$C_3H_{11}N_2O_3S_2$	148652	$H_2NHNC(=NHNH_2)NHCH_2CH_2SSO_3H$		25	0	25	0(T)	11
$C_4H_2M_2O_4S$	670		55	800	0			8
$C_4H_2M_2S_2$	5935	$(HC)_2C=C(SH)_2$	58, 45	560	0(T), 0			7

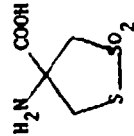
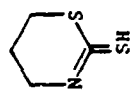
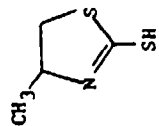
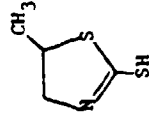
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_4N_2OS$	988			141	0			8
$C_4H_4N_2O_2S$	860			800	0			8
$C_4H_4N_6S_4$	149960			300	0	600	0	3
$C_6H_5NOS_2$	1450			450	0			63

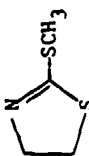
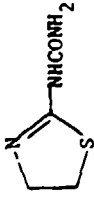
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_5NO_2S$	1187			550	0			64
$C_4H_5N_3OS_2$	120			700	0(T), + (T), 0			23
$C_4H_5N_3O_2S$	853			200	0			149
$C_4H_5N_3OS_2$	862			200	0			149

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose mg/Kg	Rating	Dose mg/Kg	Rating	
$C_4H_6Cl_3NS$	29006			100	0			65,66
$C_4H_6N_2O_5S$	1546			500	0			67
$C_4H_6N_2O_5S_3$	1146		42	300	0			68
$C_4H_6N_2O_4S$	986			44	0			8

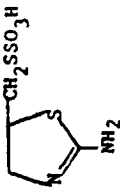
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_6N_2S$	1088	$HC \equiv CH_2SC(=NH)NR_2$	6	50	0(T)			11
$C_4H_6N_2S_4$	71			200	0(T), 0			69
C_4H_6OS	901	$(-CH_2CH-)_x$ SOCH ₃		450	0			35
$C_4H_6O_3S$	2032			500	±, 0			12
$C_4H_6O_3S_2$	169422			10	0	50	0	70

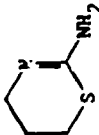
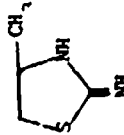
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_6S_3$	685			600	±			57
$C_4H_7ClO_2S_2$	169423	$(CH_3)_2CHOC(O)S-SCl$		15	0			71
C_4H_7NOS	2603			250	±			11
$C_4H_7NO_2S_2$	2712		1	100	±, 0			72
$C_4H_7NO_3S_3$	1974	$H_2NCH_2C \equiv CCH_2SSO_3H$		125	±, 0			11

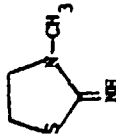
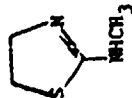
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_7NO_4S_2$	2992			200	0			72
$C_4H_7NS_2$	337			200	0(T)			49
$C_4H_7NS_2$	1044			35	0			47
$C_4H_7NS_2$	1052			200	0			47

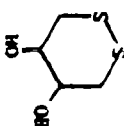
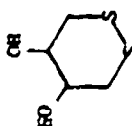
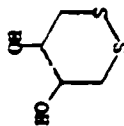
Molecular Formula	VR Number	Structure	Salt Form	Antirad'ation Activity				Reference
				I. ¹³¹		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₄ H ₇ NS ₂	2586			150	0			73
C ₄ H ₇ N ₃ OS	37709			600	0			74
C ₄ H ₇ N ₃ S	655	NCCH ₂ CH ₂ SC(=NH)NH ₂	1	75	0	400	0	75
C ₄ H ₈ AgNOS	2089	CH ₃ CONHCH ₂ CH ₂ SAr	1	150	0			80
C ₄ H ₈ ClNOS	80	H ₂ NCH ₂ CH ₂ SC(O)CH ₂ Cl	1	600	0			81
C ₄ H ₈ ClNO ₂ Pd	3296	HOOCCH ₂ NHCH ₂ CH ₂ SPdCl	42	5	0			76
C ₄ H ₈ Cl ₃ NOS	30089	H ₂ NCH ₂ CH ₂ SCH(OH)CCl ₃	1	200	+,0			65
C ₄ H ₈ F ₃ NOS	76063	H ₂ NCH ₂ CH ₂ SCH(OH)CF ₃	1	320	+(T),+,0	250	0	65

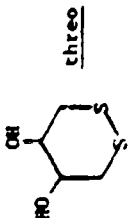
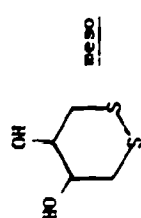
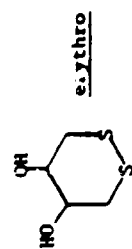
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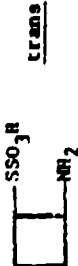
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_8F_3NO_3S_2$	60188	$CF_3CH_2NHCH_2CH_2SSO_3H$		1000	0(T), 0			59
$C_4H_8F_3NS$	2745	$CF_3CH_2NHCH_2CH_2SH$		200	0(T), 0			77
$C_4H_8N_2O_5S$	661	$HOOCCH_2CH_2SC(=NH)NH_2$	1	700	0			8
$C_4H_8N_2O_2S$	1164	$CH_3CONHCOCH_2SH$		500	±			9
$C_4H_8N_2O_2S_2$	544	$HSCCH_2CONHCOCH_2SH$		300	±, ±, 0			9
$C_4H_8N_2O_2S_2$	81009	$H_2NCOCH_2SSCH_2CONH_2$		50	0	250	0(T), 0	82
$C_4H_8N_2O_3S_3$	94795			20	0			68

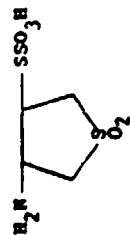
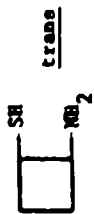
Molecular Formula	MP Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_9N_2O_4S_2$	864	$HO_2NCOCH_2SSCH_2CONH_2H$		250	0			9
$C_4H_8N_2O_8S_4$	2279	$HO_3SSCH_2CONHCOCH_2SSO_3H$	58	800	0(T), 0			67
$C_4H_8N_2S$	338		1	15	0			23
$C_4H_8N_2S$	665	$CH_2=CHCH_2NHCSNH_2$		800	0(T), 0			11
$C_4H_8N_2S$	3429		6	30	$\pm, \pm$			83
$C_4H_8N_2S$	3543	$HN_2CH_2CH_2CH_2SCN$	6	10	0			11

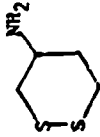
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_8N_2S$	4113		1	100	0(T),0			83
$C_6H_8N_2S$	25099			75	0,+			11
$C_6H_8N_2S_2$	2366	$CH_2=CHCH_2SC(S)NHNH_2$		30	0			14
$C_4H_8O_2S$	385	$CH_3CH_2OC(O)CH_2SH$		250	0(T),0			26
$C_6H_8O_2S_2$	42756	$(HSCH_2)_2CHCOOH$		7.5	0	20	0(T),0	84
$C_6H_8O_2S_2$	111477			18	0			3

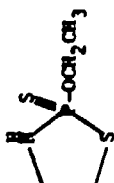
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_8O_5S_2$	122969	 <u>threo</u>		70	0			43
$C_4H_8O_5S_2$	123947	 <u>meso</u>		300	0			43
$C_4H_8O_5S_2$	156786	 <u>erythro</u>		250	0			85
$C_4H_8O_5S_2$	157112	$HOCH_2CH_2SSC(O)OCH_3$		15	0	200	0	210,19
$C_4H_9NO_5$	81	$H_2NCH_2CH_2SC(O)CH_3$	1	450	+,±,0			81

Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/Kg	Rating	
$C_4H_8O_2S_2$	122969	 <u>threo</u>		70	0			43
$C_4H_8O_2S_2$	123947	 <u>meso</u>		300	0			43
$C_4H_8O_2S_2$	156786	 <u>erythro</u>		250	0			85
$C_4H_8O_3S_2$	157112	$HOCH_2CH_2SSC(O)OCH_3$		15	0	200	0	210, 19
C_4H_9NOS	81	$H_2NCH_2CH_2SC(O)CH_3$	1	450	$+,-,0$			81

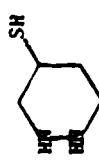
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₆ H ₉ NO ₂ S ₂	150080	H ₂ NCH ₂ CH ₂ SSC(O)OCH ₃	1	20	0			19,210
C ₆ H ₉ NO ₂ S ₂	177649	H ₂ NCH ₂ CH ₂ SSCH ₂ COOH	1	100	+,+,±	1000	0(T),±	71
C ₆ H ₉ NO ₃ S	4707	CH ₃ CONCHCH ₂ CH ₂ SO ₂ H	60	1000	0			88
C ₆ H ₉ NO ₃ S ₂	1526	[-CH ₂ CH(NR ₂)-] _x [-CH ₂ CH(SSO ₃ H)-] _x	57	600	0			23
C ₆ H ₉ NO ₃ S ₂	157736	H ₂ NCH ₂ CH=CHCH ₂ NH ₂ <u>trans</u>		200	0			89
C ₆ H ₉ NO ₃ S ₂	206036			400	+,0	700	0	90
C ₆ H ₉ NO ₄ S	529	CH ₂ CONCHCH ₂ CH ₂ SO ₃ H		1000	0			6
C ₆ H ₉ NO ₄ S ₂	2328	CH ₃ CONCHCH ₂ CH ₂ SSO ₃ H	57	400	0			91

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_9NO_5S_3$	2019			500 0				27
C_4H_9NS	2439			30 0				12
C_4H_9NS	61131		1	560 0				92
C_4H_9NS	189440		1	100 +,0		300 +,0		93,100
C_4H_9NS	190282		1	100 +,+,0		300 +,0		93,100

Molecular Formula	UR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_9NS_2$	32			40	0			94
$C_4H_9NS_2$	2280			50	0			72
$C_6H_9NS_2$	2507	$CH_3N=C(SCH_3)_2$		100	0			14
$C_6H_9NS_3$	2048	$H_2NCH_2CH(CH_3)SCSSH$		150	0			15
$C_4H_9N_3OS$	656	$H_2NCOCH_2CH_2SC(=NH)NH_2$	1	350	0(T), 0			75
$C_4H_9N_3OS$	1539	$HCOHCH_2CH_2SC(=NH)NH_2$	1	300	0(T)			27
$C_4H_9N_3OS$	2511	$H_2NCONH-C(CH_3)_2CH_2SH$		150	0			14

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose %g/kg	Rating	Dose Mg/kg	Rating	
$C_4H_9M_3O_2S$	1426	$H_2NC(-NH)NHCH(COOH)CH_2SR$		1050	0			20
$C_4H_9M_3S$	2406	$CH_2=CHCH_2SC(-NH)NHNH_2$	1	10	0			14
$C_4H_9M_3S_2$	2504	$H_2NCSNH=C(CH_3)CH_2SR$		400	0			14
$C_4H_9M_3S_3$	783	$H_2NC(-NH)NHCH_2CH_2SC(S)SR$		100	+			31
$C_4H_{10}MOPS_2$	1699			200	0			95
$C_4H_{10}MPS_2$	1815			100	0			95
$C_4H_{10}M_2OS$	1939	$H_2NCH_2CH_2NHCOCH_2SH$		800	+(T), ±			9

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_{10}N_2OS$	2027	$CH_2CH(OH)CH_2SC(=NH)NH_2$	35	200 0				12
$C_4H_{10}N_2OS$	180036	$CH_2NHCSNHCH_2CH_2OH$		600 0				89
$C_4H_{10}N_2OS_2$	177648	$H_2NCH_2CH_2SSCH_2CONH_2$	1	200 +,+,±		1000 0(T),0		71
$C_4H_{10}N_2O_3S_2$	1531	$CH_3C(=NH)NHCH_2CH_2SSO_3H$		150 0				96
$C_4H_{10}N_2O_3S_2$	1758	$CH_3CH_2NHC(=NH)CH_2SSO_3H$		100 S				10,37
$C_4H_{10}N_2O_3S_2$	1868	$(CH_3)_2NC(=NH)CH_2SSO_3H$		90 +,0		400 +(T),0		37,97
$C_4H_{10}N_2O_3S_2$	2652	$H_2NC(=NH)SCH_2CH_2CH_2SO_3H$		2000 0(T),0				39
$C_4H_{10}N_2O_3S_2$	147953	$HOCCH_2CH_2NHC(=NH)CH_2SSO_3H$		300 +(T),+,0		600 0		98
$C_4H_{10}N_2O_6S_4$	92441	$HO_3SSCH_2C(=NH)NHCH_2CH_2SSO_3H$	42.57	100 +,±,0		600 0		59
$C_4H_{10}N_2S$	663	$(CH_3)_2CENHCNH_2$		450 0				11
$C_4H_{10}N_2S$	664	$CH_3CH_2CH_2NHCSNH_2$		500 0				11

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Hg/Kg	Rating	Dose Hg/Kg	Rating	
$C_4H_{10}N_2S$	1989		1	750	+,±			99
$C_4H_{10}N_2S$	6133	$H_2NCH_2CH_2C(=NH)SCH_3$	2	50	0			166
$C_{10}H_{16}N_2S$	75613	$(CH_3)_2NCSNHCH_3$		370	0			11
$C_4H_{10}N_2S$	76841	$(CH_3)_2NC(=NH)CH_2SH$	1	100	+(T),±	200	+(T),+,0	37
$C_4H_{10}N_2S_2$	1962	$(CH_3)_2NNHCSSCH_3$		30	0(T)			34,40
$C_4H_{10}N_2S$	2364	$CH_3NHCSNHCH_2CH_2SH$		300	0			14
$C_4H_{10}N_4O_2S$	1563	$H_2NNHCOCH(SH)CH_2CONHNH_2$		500	0			9
$C_4H_{10}N_4S$	1724	$CH_2CH_2SC(=NH)NHC(=NH)NH_2$	6	200	0			26
$C_4H_{10}N_4S_2$	166317	$H_2N(=NH)CH_2SSCH_2C(=NH)NH_2$	25	25	+,+,0	50	+,+,±,0	98
$C_4H_{10}O_2S_2$	464	$HOCH_2CH_2SSCH_2CH_2OH$		200	0			3

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₄ H ₁₀ O ₄ S ₂	3138	HO ₂ S(CH ₂) ₄ SO ₂ H		800	0			101
C ₄ H ₁₁ NOS	698	HOCH ₂ CH ₂ NHCH ₂ CH ₂ SH	1	400	+,0			102,103,104
C ₄ H ₁₁ NOS	1996	HOCH ₂ CH ₂ CH(NH ₂)CH ₂ SH		500	+,0			105
C ₄ H ₁₁ NOS	4772	CH ₃ CH ₂ ONHCH ₂ CH ₂ SH		200	0			106
C ₄ H ₁₁ NOS ₂	4116	H ₂ NC(CH ₂ SH) ₂ CH ₂ OH	1	5	0			107
C ₄ H ₁₁ NO ₂ S	2389	H ₂ NC(CH ₂ OH) ₂ CH ₂ SH	1	1000	+,+,0	2000	+	107
C ₄ H ₁₁ NO ₃ S ₂	362	(CH ₃) ₂ NCH ₂ CH ₂ SSO ₃ H		350	0(T),0			23
C ₄ H ₁₁ NO ₃ S ₂	1036	H ₂ NCH ₂ CH(CH ₂ CH ₃)SSO ₃ H		350	+,0			11
C ₄ H ₁₁ NO ₃ S ₂	1095	CH ₃ CH ₂ NHCH ₂ CH ₂ SSO ₃ H		300	+			23
C ₄ H ₁₁ NO ₃ S ₂	1488	H ₂ NC(CH ₃) ₂ CH ₂ SSO ₃ H		600	+	3000	0	109
C ₄ H ₁₁ NO ₃ S ₂	1570	H ₂ NCH ₂ CH ₂ CH ₂ CH ₂ SSO ₃ H		50	0			68
C ₄ H ₁₁ PO ₃ S ₂	182619	CH ₃ CH ₂ CH(NH ₂)CH ₂ SSO ₃ H		600	0(T),+,0			110

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_{11}NO_4S$	1723	$H_2NC(CH_3)_2CH_2OSO_3H$		1000 0				26
$C_4H_{11}NO_4S_2$	3124	$HOCH_2CH_2NHCH_2CH_2SSO_3H$		800 $\pm, \pm$				111
$C_4H_{11}NO_5S_2$	2917	$H_2NC(CH_2OH)_2CH_2SSO_3H$		1200 0				107
$S_2C_4H_{11}NO_6S_4$	1105	$HO_3SSCH_2CH_2NHCH_2CH_2SSO_3H$	57	500 0(T)				112
$C_4H_{11}NS$	43	$CH_3CH_2CH(NH_2)CH_2SH$	1	200 0(T), $\pm, 0$				113
$C_4H_{11}NS$	339	$H_2NC(CH_3)_2CH_2SH$	1	200 $\pm$ (T), 0				47
$C_4H_{11}NS$	364	$H_2NCH(CH_3)CH(CH_3)SH$		300 $\pm, 0$				47
$C_4H_{11}NS$	680	$H_2NCH(CH_3)CH_2CH_2SH$	1	90 0				49
$C_4H_{11}NS$	789	$H_2NCH_2CH(SH)CH_2CH_3$		200 0				49
$C_4H_{11}NS$	814	$H_2NCH_2CH_2CH(CH_3)SH$	1	200 0				114
$C_4H_{11}NS$	889	$ClCH_2CH_2NHCH_2CH_2SH$	1	150 0				12

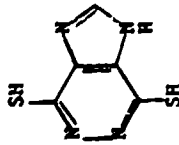
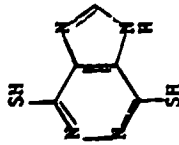
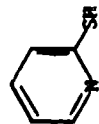
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_{11}NS$	984	$(CH_3)_2NCH_2CH_2SH$	1	125 0				23
$C_4H_{11}NS$	1553	$H_2NCH_2C(CH_3)_2SH$	1	100 0(T),0				115
$C_4H_{11}NS_2$	1621	$H_2NC(CH_3)(CH_2SH)_2$	1	7.5 0				105
$C_4H_{11}NS_2$	1695	$HN(CH_2CH_2SH)_2$	1	40 0				94
$C_4H_{11}NS_2$	2704	$RSCH_2CH_2CH(NH_2)CH_2SH$	27	40 0				94
$C_4H_{11}N_3OS$	1988	$H_2NOCH_2CH_2CH_2SC(=NH)NH_2$	7	220 +,0				51
$C_4H_{11}N_3OS$	74177	$H_2NNHCOCH_2NHCH_2CH_2SH$		320 0				116
$C_4H_{11}N_3O_3S_2$	1145	$H_2NC(=NH)NHCH_2CH_2CH_2SSO_3H$		250 + (T), +				52
$C_4H_{11}N_3O_3S_2$	1290	$H_2NC(=NH)N(CH_3)CH_2CH_2SSO_3H$		100 +				52
$C_4H_{11}N_3O_3S_2$	1451	$H_2NC(=NH)NHCH_2CH(CH_3)SSO_3H$		200 0(T)				52
$C_4H_{11}N_3O_3S_2$	1608	$H_2NC(=NH)NHCH(CH_3)CH_2SSO_3H$		200 +,0				52

Molecular Formula	W. Number	Structure	Salt Form	Attiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₂ H ₁₁ NS	984	(CH ₃) ₂ NCH ₂ CH ₂ SH	1	125 0				23
C ₄ H ₁₁ NS	1553	H ₂ NCH ₂ C(CH ₃) ₂ SH	1	100 6(T), 0				115
C ₄ H ₁₁ NS ₂	1621	H ₂ NC(CH ₃)(CH ₂ SH) ₂	1	7.5 0				105
C ₄ H ₁₁ NS ₂	1695	HN(CH ₂ CH ₂ SH) ₂	1	40 0				94
C ₄ H ₁₁ NS ₂	2704	HSCH ₂ CH ₂ CH(NH ₂)CH ₂ Si:	27	40 0				94
C ₄ H ₁₁ N ₃ OS	1988	H ₂ NOCH ₂ CH ₂ CH ₂ SC(-NH)NH ₂	7	220 +, 0				51
C ₄ H ₁₁ N ₃ OS	74177	H ₂ NNHCOCH ₂ NHCH ₂ CH ₂ SH		320 0				116
C ₄ H ₁₁ N ₃ O ₂ S ₂	1145	H ₂ NC(-NH)NHCH ₂ CH ₂ CH ₂ SSO ₃ H		250 + (T), +				52
C ₄ H ₁₁ N ₃ O ₂ S ₂	1290	H ₂ NC(-NH)N(CH ₃)CH ₂ CH ₂ SSO ₃ H		100 +				52
C ₄ H ₁₁ N ₃ O ₂ S ₂	1451	H ₂ NC(-NH)NHCH ₂ CH(CH ₃)SSO ₃ H		200 0 (T)				52
C ₄ H ₁₁ N ₃ O ₂ S ₂	1608	H ₂ NC(-NH)NHCH(CH ₃)CH ₂ SSO ₃ H		200 +, 0				52

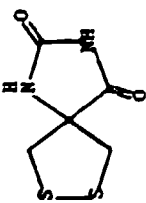
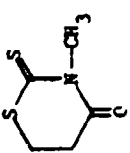
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity					Reference
				I.P.		P.O.			
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	Rating	
$C_4H_{11}N_3Se$	1703	$H_2NCH_2CH_2CH_2SeC(=NH)NH_2$	7	25	0				55
$C_4H_{11}O_3PS$	637	$CH_3CH_2CH_2CH_2SPO_3H_2$	58	1000	0				118
$C_4H_{12}Cd_3Cl_4N_2S_2$	173143	$(H_2NCH_2CH_2S)_2Cd \cdot 2 CdCl_2$		1	0				76
$C_4H_{12}FeN_2S_2$	2663	$(H_2NCH_2CH_2S)_2Fe$	25	100	0				78,79
$C_4H_{12}NO_2PS$	127017	$CH_3CH_2CH_2CH_2NHP(O)(OH)SH$		25	+(T),+,+,0	200	+(T),0		43
$C_4H_{12}NO_3PS$	1490	$H_2NC(CH_3)_2CH_2SPO_3H_2$		600	+	1500	±		109
$C_4H_{12}NO_3PS$	4470	$CH_3CH_2CH(NH_2)CH_2SPO_3H_2$		180	0				56,243
$C_4H_{12}NO_3PS$	193706	$H_2NCH_2CH_2SP(OH)(OH)OCH_2CH_3$		75	0	100	0		120
$C_4H_{12}NO_4PS$	8186	$HOCH_2CH_2NHCH_2CH_2SPO_3H_2$	77	1200	+,+,±,0	1600	+		121
$C_4H_{12}NO_5PS$	176241	$H_2NC(CH_2OH)_2CH_2SPO_3H_2$	57	1000	+(T),+,+,±	1000	0,±		122
$C_4H_{12}N_4MIS_2$	86101	$(H_2NCH_2CH_2S)_2NI$		25	0(T),+	100	0		76

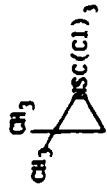
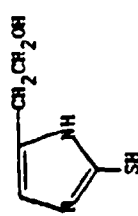
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₄ H ₁₂ N ₂ OS	2422	HOCH ₂ CH ₂ NHCHCH ₂ CH ₂ SH		50 0				12
C ₄ H ₁₂ N ₂ OS ₂	3629	H ₂ NCH ₂ CH ₂ SS(O)CH ₂ CH ₂ NH ₂	2	100 0				83
C ₄ H ₁₂ N ₂ O ₂ S	3064	H ₂ NCH ₂ CH ₂ SO ₂ N(CH ₃) ₂	1	1000 0				2
C ₄ H ₁₂ N ₂ O ₂ S ₂	728	H ₂ NCH ₂ CH ₂ SSO ₂ CH ₂ CH ₂ NH ₂	2	500 + (T), + 100 0		1000 ±, 0		247
C ₄ H ₁₂ N ₂ O ₂ S ₂	2718	(CH ₃) ₂ MSO ₂ NHCH ₂ CH ₂ SH		300 0				22
C ₄ H ₁₂ N ₂ O ₂ Se ₂	3053	H ₂ NCH ₂ CH ₂ SeSeO ₂ CH ₂ CH ₂ NH ₂		10 0				11
C ₄ H ₁₂ N ₂ O ₆ S ₄	2717	HO ₃ SSCH ₂ CH(NH ₂)CH ₂ SSO ₃ H		400 0 (T)				39
C ₄ H ₁₂ N ₂ PdS ₂	173144	(H ₂ NCH ₂ CH ₂ S ⁻) ₂ ·Pd		10 0				11
C ₄ H ₁₂ N ₂ S	884	H ₂ NCH ₂ CH ₂ NHCHCH ₂ CH ₂ SH	2	400 + (T), ±, 0				231
C ₄ H ₁₂ N ₂ S	2693	(CH ₃) ₂ NHCHCH ₂ CH ₂ SH	39	500 0				124
C ₄ H ₁₂ N ₂ S ₂	352	H ₂ NCH ₂ CH ₂ SSCH ₂ CH ₂ NH ₂	2	150 +, ±, 0		500 + (T)		11

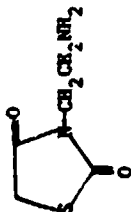
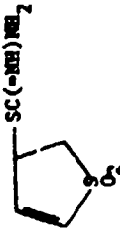
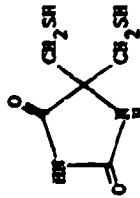
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_{12}N_2S_2$	80685	$(CH_3)_2NSSN(CH_3)_2$		30	0			1
$C_4H_{12}N_2S_2Zn$	92969	$(H_2NCH_2CH_2S)_2Zn$		25	0(T), $\pm$			71
$C_4H_{12}N_2S_3$	125046	$(H_2NCH_2CH_2S)_2S$	27	50	0	600	+0	1
$C_4H_{12}N_2S_4$	116108	$(CH_3)_2NSSSN(CH_3)_2$		40	0			1
$C_4H_{12}N_2Se_2$	550	$H_2NCH_2CH_2SeSCH_2CH_2NH_2$	2	7.5	0			125
$C_4H_{12}N_3O_3PS$	67698	$H_2NC(=NH)CH_2CH_2CH_2SP(O)(OH)_2$	53, 60	180	+0	600	+	116
$C_4H_{12}N_4S$	1870	$H_2NC(=NH)CH(CH_3)SC(-NH)NH_2$	2	375	0(T)			19
$C_4H_{13}AsN_2O_2S_2$	91480	$(H_2NCH_2CH_2S)_2As(O)OH$		50	0(T)			54
$C_4H_{13}N_2O_3PS$	2578	$H_2NCH_2CH_2NCH_2CH_2SPO_3H_2$	42	800	+, +, $\pm$, 0	2000	0	57, 154
$C_4H_{13}N_2O_3PS$	194423	$L-H_2NCH_2CH_2CH(NH_2)CH_2SPO_3H_2$		1000	+(T), +, +, +, $\pm$	1000	0	126

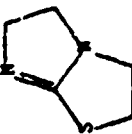
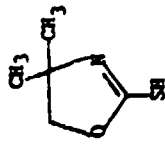
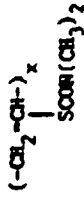
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_4H_{13}N_2PS_4$	2312	$(HSCH_2CH_2NH)_2P(S)SH$ 		187	0(T),0			127
$C_5H_4N_4S_2$	1080			187	0			8
$C_7H_8N_4S_2$	1602			800	0			128
C_5H_5NOS	1259			1000	0			44
C_5H_5NS	508			600	$\pm$,0			11

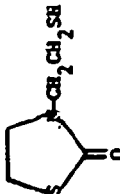
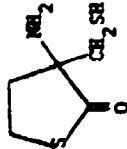
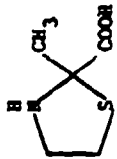
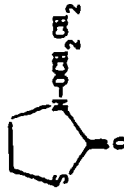
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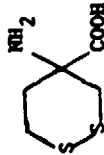
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_6N_2O_2S_2$	1108			40	0(T),0			26
$C_5H_7F_6NOS$	95570	$(CF_3)_2C(OH)SCH_2CH_2NH_2$	1	150	0			65
$C_5H_7NOS_2$	1889			500	0			64
$C_5H_7NO_2S_5$	3119	$HS(S)CNHCH(COOH)CH_2SC(S)SH$	62	500	0			129
$C_5H_7N_2O_2PS$	132198		68	15	0			43

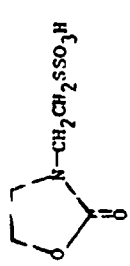
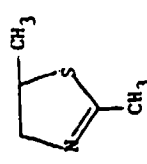
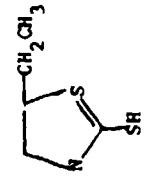
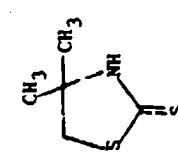
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_8Cl_2N_2S$	1839	$Cl_2C=C(CH_3)CH_2SC(=NH)NH_2$	1	30	0			28
$C_5H_8Cl_3NS$	132191			20	0			1
$C_5H_8F_3NOS$	2129	$CF_3CONHCH_2CH(CH_3)SH$		400	0			27
$C_5H_8F_3NOS_2$	179210	$CF_3CH_2SC(O)SCH_2CH_2NH_2$	1	150	$\pm$.0	150	0	61
$C_5H_8N_2OS$	205			1500	0			35

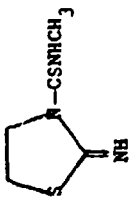
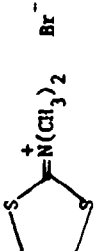
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose mg/kg	Rating	Dose mg/kg	Rating	
$C_5H_8N_2O_2S$	160			500	0(T), 0			131
$C_5H_8N_2O_2S$	1317		1	593	0			131
$C_5H_8N_2O_2S_2$	2072		6	750	0(T), 0			27
$C_5H_8N_2O_2S_2$	2250			25	+			72

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_8N_2S$	2982			60	0			132
$C_5H_8N_4S_2$ 60	572		2	500	+(T), +.0			11
C_5H_9NOS	9			35	0(T)			11
C_5H_9NOS	1440			250	0			133,134
$C_5H_9NOS_2$	415		57	400	0			3

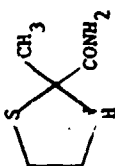
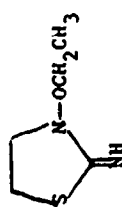
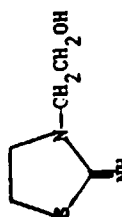
Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_9NO_2S$	2021			200	0			135
$C_5H_9NO_2S$ 51	5032		1	200	0(T).0			87
$C_5H_9NO_2S$	3352			800	0			136
$C_5H_9NO_2S$	4466			1000	0			106

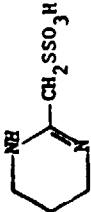
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_9NO_2S_2$	1685	$CH_2CH_2SC(S)NHCH_2COOH$		1000	0			20
$C_5H_9NO_2S_2$	1888	$CH_3NHCSCH_2CH_2COOH$		750	0			64
$C_5H_9NO_2S_2$	5030			600	0			87
$C_5H_9NO_2S_2$	5034		1	25	0			87
$C_5H_9NO_2S_4$	189180	$H_2NCH_2CH_2SC(S)S-S-COOCH_3$	1	20	0	100	0	70
$C_5H_9NO_3S$	2062	$CH_3NHCOSCH_2CH_2COOH$		200	0			64

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_9NO_5S_2$	1118		57	400	0(T)			87
C_5H_9NS	1455			400	0			47
$C_5H_9NS_2$	13			5	0			11
$C_5H_9NS_2$	1809			15	0			109

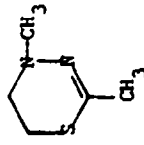
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₅ H ₉ N ₃ OS ₂	875	CH ₃ COCC(CH ₂ SH)=NNHCSNH ₂		500	0			15
C ₅ H ₉ N ₃ S	2820	CH ₃ CH(CN)CH ₂ SC(=NH)NH ₂	1	100	0			39
C ₅ H ₉ N ₃ S ₂	33944			200	0			11
C ₅ H ₁₀ BrNS ₂	87	 Br ⁻		75	0			135
C ₅ H ₁₀ F ₃ NOS	2989	CF ₃ CH(OH)CH ₂ NHCH ₂ CH ₂ SH		300	0			77
C ₅ H ₁₀ N ₂ OS	694	(CH ₃) ₂ C=NNHCOCH ₂ SH		175	0(T)			11

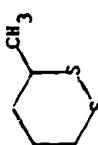
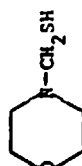
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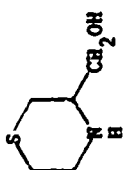
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{10}N_2OS$	3692			1200	0			136
$C_5H_{10}N_2OS$	4244		6	100	0(T), 0			106
$C_5H_{10}N_2OS$	48950		6	320	0			137
$C_5H_{10}N_2OS_3$	5855	$CH_3CONHCH_2CH_2SSC(S)NH_2$		40	0			138
$C_5H_{10}N_2O_2S$	1154	$CH_3CONHCH_2COCH_2CH_2SH$		450	0(T)			9
$C_5H_{10}N_2O_3S$	2076	$HOOCCH_2NHCONHCH_2CH_2SH$		1000	0			139

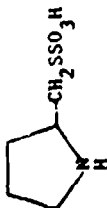
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{10}N_2O_3S_2$	3270	$NCCH_2CH_2NHCH_2CH_2SSO_3H$		800	0(T)			56
$C_5H_{10}N_2O_3S_2$	62946			180	0(T), 0(T)			59
$C_5H_{10}N_2O_3S_2$	88294			90	+0	600	0	140
$C_5H_{10}N_2S$	334	$H_2C=C(CH_3)CH_2SC(=NH)NH_2$	1	80	+, +, 0	250	0	35
$C_5H_{10}N_2S$	839	$CH_3CH=CHCH_2SC(=NH)NH_2$	1	50	0			11
$C_5H_{10}N_2S$	929	$(CH_3)_2NCH_2CH_2SCN$	6	5	0			40
$C_5H_{10}N_2S$	2417	$NCCH_2CH_2NHCH_2CH_2SH$	27	300	+, 0			141

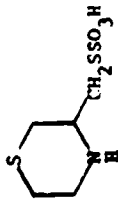
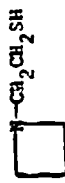
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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{10}N_2S$	88305			400 0			59	
$C_5H_8N_2S_2$	849		1	20 0			41	
$C_5H_{10}N_2S_2$	2368	$(CH_3)_2C=NNHC(S)SCH_3$		11 0(T) 0			14	
$C_5H_{10}N_2S_2$	2370	$H_2C=C(CH_3)CH_2SC(S)NHNH_2$		15 0			14	
$C_5H_{10}N_4S_2$	2336	$H_2C=CHCH_2NHC(S)NHNHCSNH_2$		600 0			15	
$C_5H_{10}O_2S$	153733	$(CH_3)_2C(SH)CH_2COOH$		100 0			142	
$C_5H_{10}O_3S$	2033	$HOCH_2CH_2SC(O)OCH_2CH_3$		300 0			12	

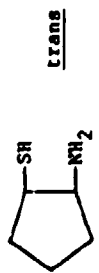
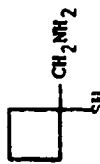
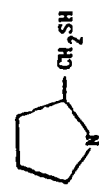
Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₅ H ₁₀ O ₃ S	2035	HSCH ₂ CH ₂ OC(O)OCH ₂ CH ₃		750	0(T),0			12
C ₅ H ₁₀ S ₂	141			450	0(T),0			87
C ₅ H ₁₁ NOS	155			50	0			28
C ₅ H ₁₁ NOS	1537	CH ₃ CONHCH ₂ CH ₂ CH ₂ SH		350	+			27
C ₅ H ₁₁ NOS	1609	CH ₃ CONHCH ₂ CH(CH ₃)SH		400	+			27
C ₅ H ₁₁ NOS	1684	HON-C(CH ₃) ₂ C(NH ₂)(CH ₃)SH		200	0			130
C ₅ H ₁₁ NOS	1759	HCON(CH ₃)CH ₂ CH ₂ CH ₂ SH		200	0			27

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₅ H ₁₁ NOS	3355			800 0				143
C ₅ H ₁₁ NOS	36164		1	400 0		400 0		144
C ₅ H ₁₁ NOS	54818	CH ₃ NHCH ₂ CH ₂ SC(O)CH ₃	27	100 0				145
C ₅ H ₁₁ NOS ₂	1693	CH ₃ CH ₂ C(S)NHCH ₂ CH ₂ SH		200 0(T), 0				20
C ₅ H ₁₁ NO ₂ S	377	(CH ₃) ₂ C(SH)CH(NH ₂)COOH	1, 41	2000 0				3
C ₅ H ₁₁ NO ₂ S	1076	L-CH ₃ CH ₂ OOCH(NH ₂)CH ₂ SH	1	593 0				5
C ₅ H ₁₁ NO ₂ S	2138	CH ₃ CH ₂ OCONHCH ₂ CH ₂ SH		560 $\pm$ (T), 0				146
C ₅ H ₁₁ NO ₂ S	2346	HOOCCH ₂ CH ₂ NHCH ₂ CH ₂ SH	27	1200 $\pm$, 0				141
C ₅ H ₁₁ NO ₂ S	3851	HOOCCH(CH ₃)NHCH ₂ CH ₂ SH		800 0(T), 0(T), 0				136

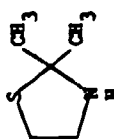
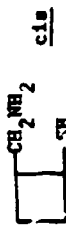
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₅ H ₁₁ NO ₂ S	67638	CH ₃ OOCOCH ₂ NHCH ₂ CH ₂ SH		320	+0			116
C ₅ H ₁₁ NO ₂ S ₂	2888	(HOCH ₂ CH ₂) ₂ NCSSH	55	800	0(T),0			12
C ₅ H ₁₁ NO ₂ S ₂	150079	H ₂ NCH ₂ CH ₂ SSC(O)OCH ₂ CH ₃	1	25	0(T),0			19
C ₅ H ₁₁ NO ₂ S ₂	157108	H ₂ NCH ₂ CH ₂ CH ₂ SSC(O)OCH ₃	1	10	0			19
C ₅ H ₁₁ NO ₂ S ₂	177645	H ₂ NCH ₂ CH ₂ SSCH ₂ CH ₂ COOH	1	75	0	100	0	71
C ₅ H ₁₁ NO ₂ S ₂	177646	H ₂ NCH ₂ CH ₂ SSCH(CH ₃)COOH		300	+0	500	0	71
C ₅ H ₁₁ NO ₂ S ₂	177647	H ₂ NCH ₂ CH ₂ SSCH ₃ COOCH ₃	27	180	+0	500	0	71
C ₅ H ₁₁ NO ₂ S ₃	173113	H ₂ NCH ₂ CH ₂ SSSC(O)OCH ₂ CH ₃	1	20	0	200	0	71
C ₅ H ₁₁ NO ₃ S ₂	1434			250	0			143

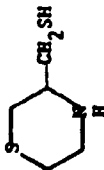
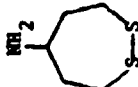
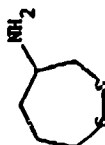
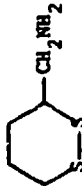
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₅ H ₁₁ NO ₃ S ₂	2408	CH ₃ CONHCH ₂ CH ₂ SSO ₂ CH ₃		20	0			80
C ₅ H ₁₁ NO ₃ S ₂	4429	CH ₃ C(=NB)SCH ₂ CH ₂ CH ₂ SSO ₃ H		1000	0			147
C ₅ H ₁₁ NO ₃ S ₂	27633	HOCH ₂ CH ₂ SSCH ₂ CH(NH ₂)COOH		400	0			11
C ₅ H ₁₁ NO ₃ S ₃	1810			250	0			143
C ₅ H ₁₁ NO ₅ S ₂	3553	CH ₃ OCOCH ₂ NHCH ₂ CH ₂ SSO ₃ H		400	0			56
C ₅ H ₁₁ NO ₅ S ₂	152923	H ₂ NCH ₂ CH(CH ₃)OCOCH ₂ SSO ₃ H		300	0	600	0	148
C ₅ H ₁₁ NS	231	H ₂ C=CHCH ₂ NHCH ₂ CH ₂ SH		100	+10			12
C ₅ H ₁₁ NS	388			10	0			150

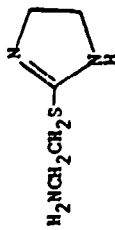
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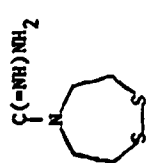
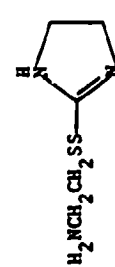
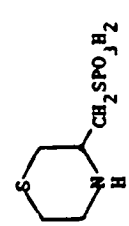
Molecular Formula	UR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₅ H ₁₁ NS	994		6	200	0			151
C ₅ H ₁₁ NS	1826			250	±.0			152
C ₅ H ₁₁ NS	2127		1	100	0			115
C ₅ H ₁₁ NS	2562			50	0			150
C ₅ H ₁₁ NS	2638		1	200	±(T).0			124

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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{11}NS$	3542	 <u>cis</u>		250 $\pm$	$\pm$			152
$C_5H_{11}NS$	76733		1	150 $\pm$	0	300	0	66
$C_5H_{11}NS$	92974			15	0			54
$C_5H_{11}NS$	192525	 <u>trans</u>		100 $\pm$	0	350	0	93,100
$C_5H_{11}NS$	192526	 <u>cis</u>		100	$\pm$ (T), $\pm$ (T)	250	$\pm$	93,100
$C_5H_{11}NS$	204011	 <u>trans</u>	1	150 $\pm$	0	300	0	93
$C_5H_{11}NS_2$	312	$(C_2H_5)_2NCSSH$	57	800	0			3

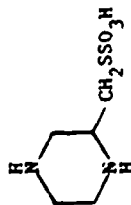
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{11}NS_2$	1960		6	125	0			143
$C_5H_{11}NS_2$	1937		1	50	0			151
$C_5H_{11}NS_2$	2202		1	25	0			94
$C_5H_{11}NS_2$	2582		1	100	0			72

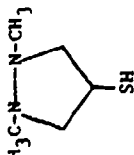
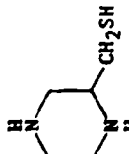
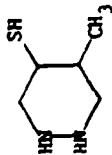
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{11}NS_3$	4100	$(CH_3)_3CSCC(S)NH_2$		560	+0			138, 153
$C_5H_{11}NS_3$	199755	$H_2NCH_2CH_2SC(S)SCH_2CH_3$	27	50	+0	200	+ $\pm$	120
$C_5H_{11}N_2O_3PS$	4471	$NOCH_2CH_2NHCH_2CH_2SPO_3H_2$		150	0(T)			57
$C_5H_{11}N_3OS$	660	$H_2NOOCH(CH_3)CH_2SC(=NH)NH_2$	1	500	0			75
$C_5H_{11}N_3S$	3850		1	10	0			34
$C_5H_{11}N_3S$	1165	$H_2NCH_2CH=CHCH_2SC(=NH)NH_2$	7	150	0			11
$C_5H_{11}N_3S$	2267		7	25	0			152

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{11}N_3S_2$	1070		1	80	+			87
$C_5H_{11}N_3S_2$	116728		28	150	+0			54
$C_5H_{11}N_3S$	1477	$CH_3NHC(=NH)NHCH_2CH_2SC(S)SH$		500	+(T)			31
$C_5H_{11}N_3S$	1479	$N_2HC(=NH)NHCH_2CH_2CH_2SC(S)SH$		200	+(T)	250	+	31
$C_5H_{12}NO_3PS_2$	3690		57	125	0			109

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₅ H ₁₂ NO ₅ PS	4473	CH ₃ OC(O)CH ₂ NHCH ₂ CH ₂ SPO ₃ H ₂		800	0(T), 0			56, 243
C ₅ H ₁₂ N ₂ OS	2155	H ₂ NCH ₂ CH ₂ SC(O)CH(CH ₃)NH ₂	2	593	+			155
C ₅ H ₁₂ N ₂ OS	2529	H ₂ NCOCH ₂ CH ₂ NHCH ₂ CH ₂ SH	27	1000	+, +, +, 0	2000	+	141
C ₅ H ₁₂ N ₂ OS	35985	H ₂ NCOCH(CH ₃)NHCH ₂ CH ₂ SH	1	560	+, +			136
C ₅ H ₁₂ N ₂ OS	100555	CH ₃ CH ₂ CH ₂ CH ₂ NHCSNHCH ₂ OH		200	0			11
C ₅ H ₁₂ N ₂ OS	190035	CH ₃ NHCSNHCH ₂ CH ₂ CH ₂ OH		600	0			89
C ₅ H ₁₂ N ₂ OS ₂	2285	(HSCH ₂ CH ₂ NH) ₂ CO		400	0			14
C ₅ H ₁₂ N ₂ OS ₂	647	HOCH ₂ CH ₂ NHCH ₂ CH ₂ NHC(S)SH		600	0			4, 31

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Molecular Formula	WR Number	Structure	Salt Form	Antiradistion Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{12}N_2O_5S_2$	2375	$(H_2NCH_2CH_2S)_2COO$	7	300	$\pm$			156,135
$C_5H_{12}N_2O_5S$	94530	$CH_3OCH_2CHONCH_2SC(=NH)NH_2$	40	200	0			157
$C_5H_{12}N_2O_5S_2$	2724	$H_2NCH_2CH_2SSCH_2CH(NH_2)COOH$	1	600	$\pm, 0$	2000	$\pm$	5
$C_5H_{12}N_2O_5S_2$	1811		6	750	0(T)			143,158
$C_5H_{12}N_2O_5S_2$	2050	$(CH_3)_2NC(=NH)CH(CH_3)SSO_3H$		100	0			10,37
$C_5H_{12}N_2O_5S_2$	2061	$CH_3CH_2C(=NH)NHCH_2CH_2SSO_3H$		200	0			96
$C_5H_{12}N_2O_5S_2$	2143	$CH_3C(=NH)NHCH_2CH_2CH_2SSC_3H$		300	0			96
$C_5H_{12}N_2O_5S_2$	2295	$H_2NC(=NH)SCH_2CH_2CH_2CH_2SO_3H$		1000	0			39
$C_5H_{12}N_2O_5S_2$	2708	$CH_2CH_2CH_2NHC(=NH)CH_2SSO_3H$		90	$\pm(T).0$			37

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{12}N_2O_3S_2$	2848	$(CH_3)_2CHNHC(=NH)CH_2SSO_3H$		100	0			37
$C_5H_{12}N_2O_3S_2$	104302	$CH_3CH_2NHC(=NH)SCH_2CH_2SO_3H$		800	0			11
$C_5H_{12}N_2O_4S_2$	2781	$H_2NCOCH_2CH_2NHCH_2CH_2SSO_3H$		800	+0			159
$C_5H_{12}N_2O_4S_2$	147956	$HOCH_2CH_2CH_2NHC(=NH)CH_2SSO_3H$		120	0	600	0	43
$C_5H_{12}N_2S$	767			48	0			160
$C_5H_{12}N_2S$	1489		7	500	+(T), 0			143, 158
$C_5H_{12}N_2S$	1990		1	40	0			160

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₅ H ₁₂ N ₂ S	5065	(CH ₃) ₂ NC(=NH)CH ₂ CH ₂ SH	1	10	0			22
C ₅ H ₁₂ N ₂ S	62069	(CH ₃) ₂ C=NNHCH ₂ CH ₂ SH		64	0			59
C ₅ H ₁₂ N ₂ S ₂	191	H ₂ NCH ₂ CH ₂ SC(S)N(CH ₃) ₂	6	100	0			40
C ₅ H ₁₂ N ₂ S ₂	2290	CH ₃ CH ₂ NHCSNHCH ₂ CH ₂ SH		400	+0			14
C ₅ H ₁₂ N ₂ S ₃	159096	(H ₂ NCH ₂ CH ₂ S) ₂ CS	28	50	0,+	300	+0	19
C ₅ H ₁₂ N ₃ S	2407	H ₂ C=C(CH ₃)CH ₂ SC(=NH)NHNH ₂	1	15	0			15
C ₅ H ₁₂ OS	154711	HOCH ₂ CH ₂ CH(CH ₃)CH ₂ SH		560	+0			142
C ₅ H ₁₃ NOS	727	CH ₃ CP(OH)CH ₂ NHCH ₂ CH ₂ SH	1	300	+±	750	0	103,104
C ₅ H ₁₃ NOS	880	CH ₃ OCH ₂ CH ₂ NHCH ₂ CH ₂ SH	1	200	0(T),0			103,104
C ₅ H ₁₃ NOS	990	HOCH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂ SH	1	250	+0	700	0	103,104
C ₅ H ₁₃ NOS	916	HOCH ₂ CH ₂ NHCH ₂ CH ₂ CH ₂ SH	1	400	+,(T),0			103,104

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{13}NOS$	1119	$HOCH_2CH_2CH_2NHCH_2CH_2SH$	1	500	+ 0			102
$C_5H_{13}NOS$	2112	$L-HOCH_2CH(CH_3)NHCH_2CH_2SH$	1	300	+ 0			103,104
$C_5H_{13}NOS$	2994	$CH_3CH_2C(CH_2OH)(NH_2)CH_2SH$	1	750	0(T), 0			107
$C_5H_{13}NOS$	3434	$HOCH_2CH_2NHCH_2CH(CH_3)SH$	1	320	+			107
$C_5H_{13}NO_2S$	1120	$HOCH_2CH_2CH_2NHCH_2CH_2SH$	1	1000	+			103,104
$C_5H_{13}N_2S$	2753	$(HOCH_2)_2CHNHCH_2CH_2SH$	1	1200	0(T), +, +, 0	2000	+	103,104
$C_5H_{13}NO_3S_2$	259	$(CH_3)_2CHNHCH_2CH_2SSO_3H$		250	0			23
$C_5H_{13}NO_3S_2$	982	$(CH_3)_2NCH_2CH_2CH_2SSO_3H$		150	0			23
$C_5H_{13}NO_3S_2$	1033	$CH_3CH_2CH_2NHCH_2CH_2SSO_3H$		225	+			23
$C_5H_{13}NO_3S_2$	1086	$(CH_3)_3N^+CH_2CH_2SSO_3^-$		50	0			161

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose mg/Kg	Rating	Dose mg/Kg	Rating	
C ₅ H ₁₃ NO ₃ S ₂	1090	CH ₃ CH ₂ CH ₂ CH(SSO ₃ H)CH ₂ NH ₂		150	0			11
C ₅ H ₁₃ NO ₃ S ₂	1094	CH ₃ CH ₂ NHCH(CH ₃)CH ₂ SSO ₃ H		250	+(T)			23
C ₅ H ₁₃ NO ₃ S ₂	1099	H ₂ NCH ₂ CH(CH ₂ CH ₃)CH ₂ SSO ₃ H		200	0			162
C ₅ H ₁₃ NO ₃ S ₂	1903	DL-CH ₃ CH ₂ CH ₂ CH(NH ₂)CH ₂ SSO ₃ H		125	0			109,140
C ₅ H ₁₃ NO ₃ S ₂	1904	L-CH ₃ CH ₂ CH ₂ CH(NH ₂)CH ₂ SSO ₃ H		125	0			110
C ₅ H ₁₃ NO ₃ S ₂	2008	H ₂ NCH ₂ (CH ₂) ₃ CH ₂ SSO ₃ H		400	0(T), 0(T)			68
C ₅ H ₁₃ NO ₃ S ₂	2095	D-CH ₃ CH ₂ CH ₂ CH(NH ₂)CH ₂ SSO ₃ H		150	0			110
C ₅ H ₁₃ NO ₃ S ₂	2108	CH ₃ CH ₂ C(CH ₃)(NH ₂)CH ₂ SSO ₃ H		300	0			109
C ₅ H ₁₃ NO ₃ S ₂	2650	HO ₃ SCH ₂ CH ₂ CH ₂ NHCH ₂ CH ₂ SH		1500	+, 0			117
C ₅ H ₁₃ NO ₃ S ₂	4619	(CH ₃) ₂ CHCH(NH ₂)CH ₂ SSO ₃ H		150	+, 0			109

Molecular Formula	MR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{13}NO_4S_2$	2997	$CH_3CHOHCH_2NHCH_2CH_2SSO_3H$		400	0			111
$C_5H_{13}NO_4S_2$	3095	$HOCH_2CH_2CH_2NHCH_2CH_2SSO_3H$		800	0(T), 0			111
$C_5H_{11}NO_5S_2$	2986	$HOCH_2CH(OH)CH_2NHCH_2CH_2SSO_3H$		1000	+, 0			111
$C_5H_{13}NO_5S_2$	3569	$(HOCH_2)_2CHNHCH_2CH_2SSO_3H$		1250	+, ±, 0			111
$C_5H_{11}NO_6S_3$	5145	$HO_3SCH_2CH_2CH_2NHCH_2CH_2SSO_3H$	57, 42	600	0			117
$C_5H_{13}NO_6S_4$	1247	$CH_3N(CH_2CH_2SSO_3H)_2$	58, 77	400	0(T), 0			87
$C_5H_{13}NS$	169	$(CH_3)_2NCH_2CH(CH_3)SH$	1	125	0			163
$C_5H_{13}NS$	178	$(CH_3)_2NCH_2CH_2CH_2SH$	1	25	0			49
$C_5H_{13}NS$	621	$CH_3CH_2CH_2CH(NH_2)CH_2SH$	1	100	+, ±, 0			47
$C_5H_{13}NS$	651	$(CH_3)_2CHCH(NH_2)CH_2SH$	1	150	+, 0			47

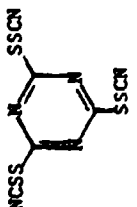
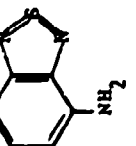
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₅ H ₁₃ NS	691	(CH ₃) ₂ CHNCH ₂ CH ₂ SH	1	100	0		12	
C ₅ H ₁₃ NS	827	CH ₃ CH ₂ CH(NH)CH ₂ CH ₂ SH	1	50	0		49	
C ₅ H ₁₃ NS	1426	CH ₃ CH ₂ CH ₂ NHCH ₂ CH ₂ SH	1	75	0		12	
C ₅ H ₁₃ NS	1554	CH ₃ CH ₂ CH ₂ CH(SH)CH ₂ NH ₂	1	75	0		164	
C ₅ H ₁₃ NS	1683	(CH ₃) ₂ C(SH)CH(NH ₂)CH ₃	1	250	0		130	
C ₅ H ₁₃ NS	1726	CH ₃ CH ₂ C(SH)(CH ₃)CH ₂ NH ₂	1	100	0		115	
C ₅ H ₁₃ NS	2601	(CH ₃) ₂ NCH(CH ₃)CH ₂ SH	1	100	0		163	
C ₅ H ₁₃ NS	26330	(CH ₃ CH ₂) ₂ NCH ₂ SH	1	75	0		28	
C ₅ H ₁₃ NS ₂	1265	(HSCN ₂) ₂ C(NH ₂)CH ₂ CH ₃	1	10	0		105	
C ₅ H ₁₃ NS ₂	1414	H ₂ NCH(CH ₂ CH ₂ SH) ₂	1	25	0		151	
C ₅ H ₁₃ NS ₂	2340	H ₂ NCH ₂ CH(SH)CH ₂ CH ₂ CH ₂ SH	1	50	0		72	

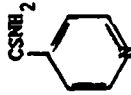
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{13}N_2O_4PS$	6458	$H_2NCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		50 0				165,243
$C_5H_{13}N_3OS$	2248	$H_2NOCCH_2(CH_2)_2CH_2SC(=NH)NH_2$	7	450 0(T),0				51
$C_5H_{13}N_3O_5S_2$	1186	$H_2NC(=NH)NHCH(C_2H_5)CH_2SSO_3H$		150 +,0				52
$C_5H_{13}N_3O_5S_2$	1291	$H_2NC(=NH)N(C_2H_5)CH_2CH_2SSO_3H$		100 +,0				52
$C_5H_{13}N_3O_5S_2$	1622	$H_2NC(=NH)NH(CH_2)_4SSO_3H$		200 0				52
$C_5H_{13}N_3O_5S_2$	2252	$C_2H_5NHCH(=NH)NHCH_2CH_2SSO_3H$		100 0				52
$C_5H_{13}N_3O_5S_2$	2567	$H_2NNHC(=NH)S(CH_2)_4SO_3H$		1200 0				117
$C_5H_{13}N_3S$	44	$CH_3CH_2CH(NH_2)CH_2SC(=NH)NH_2$	6	1000 +,0				11
$C_5H_{13}N_3S$	623	$H_2NCH_2CH_2SC(=NH)NHCH_2CH_3$	7	60 0				11
$C_5H_{13}N_3S$	648	$H_2NCH_2CH_2CH_2SC(=NH)NHCH_3$	7	125 +,+,+				11

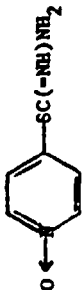
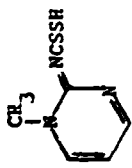
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{13}N_2O_4PS$	6458	$H_2NCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		50	0			165,243
$C_5H_{13}N_3OS$	2248	$H_2NCOCH_2(CH_2)_2CH_2SC(=NH)NH_2$	7	450	0(T), 0			51
$C_5H_{13}N_3O_3S_2$	1186	$H_2NC(=NH)NHCH(C_2H_5)CH_2SSO_3H$		150	±, 0			52
$C_5H_{13}N_3O_3S_2$	1291	$H_2NC(=NH)N(C_2H_5)CH_2CH_2SSO_3H$		100	±, 0			52
$C_5H_{13}N_3O_3S_2$	1622	$H_2NC(=NH)NH(CH_2)_4SSO_3H$		200	0			52
$C_5H_{13}N_3O_3S_2$	2252	$C_2H_5NHC(=NH)NHCH_2CH_2SSO_3H$		100	0			52
$C_5H_{13}N_3O_3S_2$	2567	$H_2NNHC(=NH)S(CH_2)_4SO_3H$		1200	0			117
$C_5H_{13}N_3S$	44	$CH_3CH_2CH_2CH_2NH_2CH_2CH_2SC(=NH)NH_2$	6	1000	±, 0			11
$C_5H_{13}N_3S$	623	$H_2NCH_2CH_2SC(=NH)NHCH_2CH_3$	7	60	0			11
$C_5H_{13}N_3S$	648	$H_2NCH_2CH_2CH_2SC(=NH)NHCH_3$	7	125	±, ±, ±			11

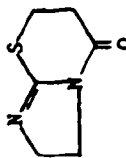
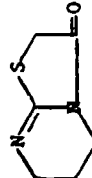
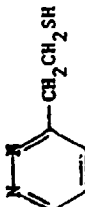
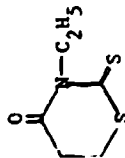
Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{14}NO_3PS$	1961	$CH_3CH_2CH_2CH(NH_2)CH_2SPO_3H_2$	57	250	0(T), +			109
$C_5H_{14}NO_3PS$	5137	$(CH_3)_2CHCH(NH_2)CH_2SPO_3H_2$	57, 45	300	+ , +	500	0	109
$C_5H_{14}NO_3PS$	193704	$H_2NCH_2CH_2SP(O)(OH)OCH_2CH_2CH_3$		175	0	500	0	120
$C_5H_{14}NO_4PS$	8192	$CH_3CH(OH)CH_2N(CH_2CH_2SPO_3H_2)$		700	+ , + , 0			121
$C_5H_{14}NO_5PS$	8187	$HOCH_2CH(OH)CH_2N(CH_2CH_2SPO_3H_2)$		250	0			121
$C_5H_{14}N_2OS$	1783	$H_2NCH_2CH(OH)CH_2N(CH_2CH_2CH_2SH)$		200	0			12
$C_5H_{14}N_2O_3S_2$	9720	$H_2N(CH_2)_3N(CH_2CH_2SSO_3H)$	1	500	0			57, 168
$C_5H_{14}N_2S$	858	$CH_3N(CH_2CH_2N(CH_2CH_2CH_2SH)$	2	300	+ , 0			231
$C_5H_{14}N_2S$	957	$H_2NCH_2CH_2N(CH_2CH_2CH_2CH_2SH)$	2	300	+ (T) , 0			231
$C_5H_{14}N_2S$	1065	$H_2NCH_2CH_2CH_2N(CH_2CH_2CH_2SH)$	2	150	+ , + , + , 0	250	0	102, 231

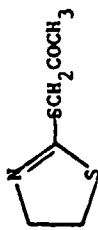
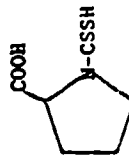
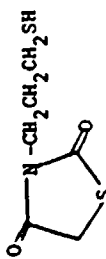
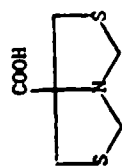
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{14}N_4S$	1485	$H_2NCH_2CH_2NHCH_2CH_2SC(=NH)NH_2$	8	100	0			11
$C_5H_{14}N_4S$	88302	$H_2NC(=NH)NHN(CH_3)CH_2CH(CH_3)SH$	24	30	0			59
$C_5H_{15}N_4O_3PS$	2721	$H_2NCH_2CH_2CH_2NHCH_2CH_2SPO_3H_2$		600	+,+,+,+,0	600	+,+	57,154
$C_5H_{15}N_4O_3PS$	4333	$CH_3NHCH_2CH_2NHCH_2CH_2SPO_3H_2$	44	400	+,+			154,169
$C_5H_{15}N_4O_3PS$	74172	$H_2NCH_2CH_2NHCH_2CH_2CH_2SPO_3H_2$		800	+(T),+,0	1500	+,0	57,154
$C_5H_{15}N_4O_3PS$	179209	$DL-H_2NCH_2CH_2CH_2CH(NH_2)CH_2SPO_3H_2$		1000	+,+,+,+	1000	0	61
$C_5H_{15}N_4O_3PS$	187094	$L-H_2NCH_2CH_2CH_2CH(NH_2)CH_2SPO_3H_2$		400	+,+,+,+,0	1000	0	126
$C_5H_{15}N_4O_3PS$	151325	$H_2NCH_2CH(OH)CH_2NHCH_2CH_2SPO_3H_2$	44	600	+(T),+,+,+	1500	0(T),+,0	168
$C_5H_{15}N_4O_3PS$	181359	$H_2NC(=NH)NHCH_2CH_2NHCH_2CH_2SPO_3H_2$	42	100	+(T),+,+,+	100	0	61

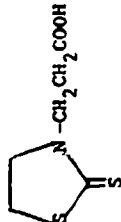
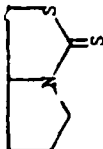
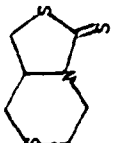
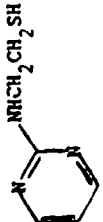
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		F.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_6S_6$	119			400	0(T), 0			23
$C_6H_4N_2S$	591			350	0			8
$C_6H_5N_3S$	707			200	0(T), 0			8
$C_6H_6N_2S$	36			650	0(T), 0			11

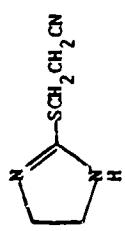
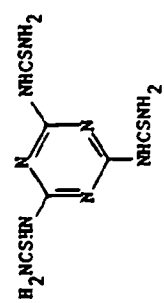
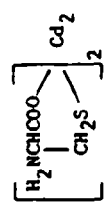
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_6N_2S$	37			350	0(T), 0(T), 0			11
$C_6H_6N_2S$	38			400	0			11
$C_6H_6N_2S$	5936	$(CH_3S)_2C=C(CN)_2$		10	0			129
C_6H_6NOS	1486			59	0			8
C_6H_7NOS	1487			444	0			8

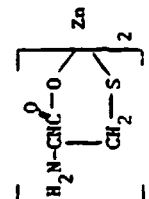
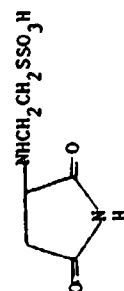
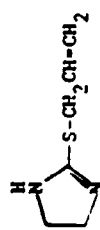
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C_6H_7NS	794			150 0				26
$C_6H_7N_3OS$	1260		1	50 0				235
$C_6H_7N_3S_2$	1762		70	105 0				15
$C_6H_8ClN_3O_3S_2$	1746		57	400 0(T)				128
$C_6H_8FNO_3S_2$	60187	$CF_3CF_2CF_2CH_2NHCH_2CH_2SSO_3H$		160 0				59

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_8N_2OS$	730		1	1200	0			131
$C_6H_8N_2OS$	1555		6	700	0			236
$C_6H_8N_2S$	392		1	50	0			63
$C_6H_8N_2S$	1748		1	250	0			128
$C_6H_9NOS_2$	1459			300	0			64

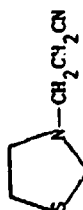
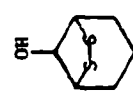
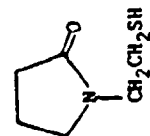
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		I.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_9NO_2S_2$	2930		27	200	0			132
$C_6H_9NO_2S_2$	2275		61	1000	0			15
$C_6H_9NO_2S_2$	2611			250	0			237
$C_6H_9NO_2S_2$	4242		1	640	0			87

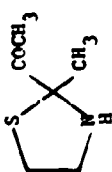
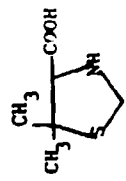
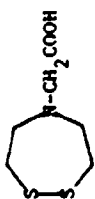
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_9NO_2S_2$	48677			200	0			156
$C_6H_9NS_2$	1109			33	0			143
$C_6H_9NS_3$	3602			75	+, +, 0			109
$C_6H_9NS_4$	2587	$CH_3CH_2SC(S)SCH_2CH_2NCS$		100	0			14
$C_6H_9N_3S$	746			300	0			170

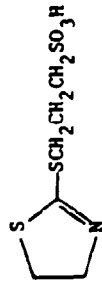
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_9N_3S$	774		1	200	0			131
$C_6H_9N_3S_3$	121			275	0(T), 0(T), 0			23
$C_6H_{10}Cd_2N_2O_4S_2$	3092			25	0			76,171
$C_6H_{10}Cl_3NO_2S$	95568	$CH_3CONHCH_2CH_2SCH(OH)CCl_3$		500	±			65
$C_6H_{10}F_5NOS$	2922	$CF_3CF_2CHOHCH_2NHCH_2CH_2SH$		200	±, 0			77

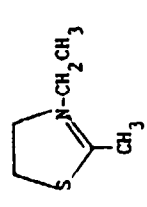
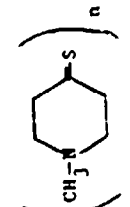
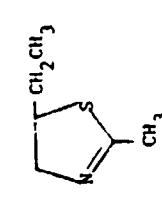
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_8N_2O_5S_2$	2020		6	150	0			27
$C_6H_{10}N_2O_4S_2Zn$	3079			150	+			76
$C_6H_8N_2O_5S_2$	36246			1000				165, 242
$C_6H_8N_2S$	799		1	50	0			11
$C_6H_{10}N_2S$	2563		6	60	0			150

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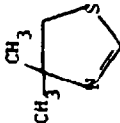
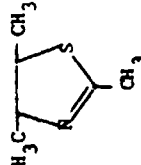
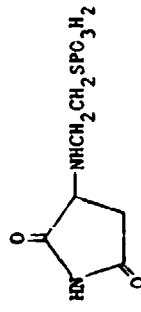
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{10}N_2S$	138416		1	125	0(T), 0	350	0	43
$C_6H_{10}N_2S_2$	940	$H_2N(NH=)CSCH_2C(=O)CH_2SC(=NH)NH_2$	2	35	0			11
$C_6H_{10}OS_2$	173312	 <u>syn</u>		50	±, 0	80	0	172
$C_6H_{10}O_2S_2$	1613	$CH_3COSCH_2CH_2SCOCH_3$		100	0(T), 0			11
$C_6H_{10}O_2S_2$	2585	$CH_3CH_2OC(S)SCH_2COCH_3$		200	0			14
$C_6H_{10}O_4S_2$	383	MESO $HOOCCH(SH)CH_2CH_2CH(SH)COOH$		700	+(T), 0			35
$C_6H_{11}NOS$	1465			200	0			25

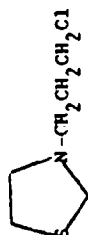
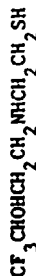
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{11}NOS$	3309		1	800 $\pm$ (T).0				22
$C_6H_{11}NOS_2$	18338	$H_2NCH_2CHSC(S)CH_2COCH_3$	27	50 0		200 0		70
$C_6H_{11}NOS_3$	27740	$CH_3CONRCH_2CH_2SSC(S)CH_3$		75 0				173
$C_6H_{11}NO_2S$	85561			300 0				6
$C_6H_{11}NO_2S$	105436	D- 		1000 0				66
$C_6H_{11}NO_2S_2$	3317		27	100 $\pm$.0				174

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{11}NO_2S_2$	4917	$CH_3CONHCH_2CH_2SSC(O)CH_3$		50	+0			153,173
$C_6H_{11}NO_2S_3$	2051	$CH_3SC(O)NHCH_2CH_2SC(O)SCH_3$		200	0			146
$C_6H_{11}NO_2S_4$	189196	$H_2NCH_2CH_2SC(S)S-SC(O)OCH_2CH_3$	1	25	0			70
$C_6H_{11}NO_3S$	2063	$CH_3CH_2NHC(O)SCH_2CH_2COOH$		500	0(T), 0			64
$C_6H_{11}NO_3S_2$	1803	$HOCH_2CH_2NHC(S)SCH_2CH_2COOH$		500	0			64
$C_6H_{11}NO_3S_2$	167767	$CH_3CONHCH_2CH_2SSCH_2COOH$		260	0			175
$C_6H_{11}NO_3S_3$	5136			500	0			117
$C_6H_{11}NO_4S$	193	$HOOCCH_2CH_2SCN_2CH(NH_2)COOH$		800	0			176
$C_6H_{11}NO_4S_2$	177641	$H_2NCH_2CH_2SSCH(COOH)CH_2COOH$	1	500	0	1000	0	71

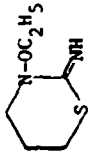
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{11}NO_6S_2$	165159	$HOOCCH_2CH_2CONHCH_2CH_2SSO_3H$	57	500 0		600 0		11
$C_6H_{11}NS$	245			200 0, ±, 0				47
$C_6H_{11}NS$	389		1	37 0				177
$C_6H_{11}NS$	1068			105 0				47

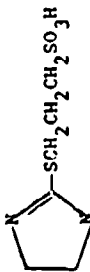
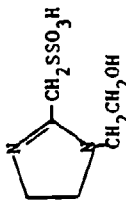
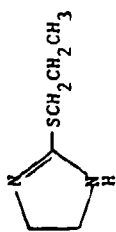
101

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{11}NS$	1069			250	0			47
$C_6H_{11}NS$	1116			250	+			47
$C_6H_{11}NS_2$	2509	$H_2C=CHCH_2N=(SCH_3)_2$		100	0			14
$C_6H_{11}N_2O_5PS$	27390			1000	+(T) 0			165, 243
$C_6H_{11}N_3OS$	146076	$H_2NCOCH_2CH_2NHCH_2CH_2SCN$	27	3	0			1
$C_6H_{11}N_3O_2S_2$	2619	$H_2NCONHN=CHCH_2SC(S)OCH_2CH_2$		100	0			14

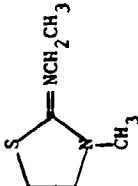
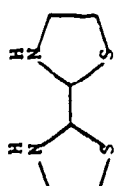
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{11}N_3O_3S_2$	1800		24, 77	200 0				110
$C_6H_{11}N_3S$	2052		6	500 0				34
$C_6H_{11}N_3S_3$	2273		42	100 0				129
$C_6H_{12}ClNS$	80860		1	150 0				92
$C_6H_{12}F_3NOS$	3084			200 0				77

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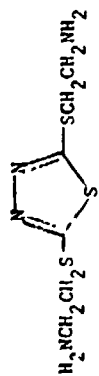
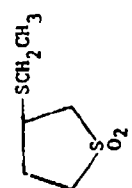
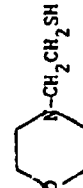
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{12}F_3NS$	2836	$CF_3CH_2CH_2CH_2NHCH_2CH_2SH$		50	0			77
$C_6H_{12}N_2OS$	1153	$(CH_3)_2C=NNHCOCH_2CH_2SH$		125	0			9
$C_6H_{12}N_2OS$	4467		7,42	100	0			106
$C_6H_{12}N_2OS_3$	3596	$CH_3CONHCH_2CH_2SSC(S)NHCH_3$		25	0			153,138
$C_6H_{12}N_2O_2S$	1148	$HOOCCH_2CH_2SC(=NH)NHCH_2CH_3$	6	500	0			63
$C_6H_{12}N_2O_2S$	1157	$HOOCCH_2CH_2SC(=NCH_3)NHCH_3$	6	1200	0			63
$C_6H_{12}N_2C_2S_2$	1166	$HSCH_2CH_2CONHNHCOCH_2CH_2SH$		150	0			9
$C_6H_{12}N_2O_2S_2$	1564	$CH_3CH(SH)CONHNHCOC(SH)CH_3$		250	±(T)			9
$C_6H_{12}N_2O_2S_2$	1938	$HSCH_2CONHCH_2CH_2NHCOCH_2SH$		100	±,0			9

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{12}N_2O_3S_2$	3290	<chem>NCCH2CH(CH3)NHCH2CH2SSO3H</chem>		600	0			159
$C_6H_{12}N_2O_3S_2$	48683	<chem>NCCH2CH2NHCH(CH3)CH2SSO3H</chem>		1000	0(T), 0			57
$C_6H_{12}N_2O_3S_2$	4614			1000	0			147
$C_6H_{12}N_2O_4PtS_2$	3081	<chem>[HOOCCH(NH2)CH2S-]2Pt</chem>	51	240	0			76, 171
$C_6H_{12}N_2O_4S_2$	148744			150	0	600	0	43
$C_6H_{12}N_2S$	532		6	80	0			11

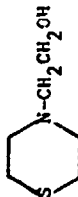
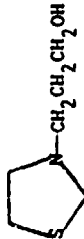
105

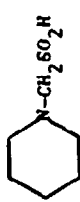
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{12}N_2S$	3026			20	0			132
$C_6H_{12}N_2S_2$	2331	$CH_3CH_2SC(S)NHN-C(CH_3)_2$		5	0			14
$C_6H_{12}N_2S_2$	2510	$(CH_3)_2C=NN-C(SCH_3)_2$		10	0(T), 0			14
$C_6H_{12}N_2S_2$	145725			300	+(T), +, 0	600	+, ±	43
$C_6H_{12}N_2S_4$	592	$(CH_3)_2NC(S)S-SC(S)N(CH_3)_2$		250	0(T), 0			272
$C_6H_{12}N_2S_6$	594	$HSSCNHCH_2CH_2SSCH_2CH_2NHCSSH$		200	+, +, 0			129
$C_6H_{12}N_4O_2S_2$	48684	$H_2N(NH-)CSCH_2CH(COOH)CH_2SC(=NH)NH_2$	7	560	0			116
$C_6H_{12}N_4S_2$	538		7	15	0			11

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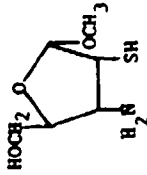
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{12}N_4S_2$	1147	$H_2N(HN=)CSCH_2CH=CHCH_2SC(=NH)NH_2$	2	37	0			11
$C_6H_{12}N_4S_3$	183372		27	300	+ , 0	1000	0	70
$C_6H_{12}N_2S_2$	209449			3	0			3
$C_6H_{12}O_4S$	2034	$HOCH_2CH(OH)CH_2SC(O)OCH_2CH_3$		600	0			12
$C_6H_{13}NOS$	221			200	0(T), 0			12
$C_6H_{13}NOS$	1808	$H_2NC(CH_3)_2CH_2SCOCH_3$	27	300	S(T)			109

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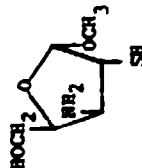
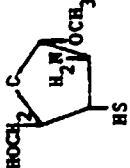
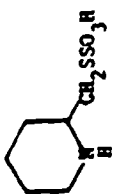
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₆ H ₁₃ NOS	1916		1	500	0			12
C ₆ H ₁₃ NOS	2204	HON-C(CH ₃) ₂ C(SH)(CH ₃)CH ₂ CH ₃		75	0			130
C ₆ H ₁₃ NOS	2315	H ₂ C=CHCH(OH)CH ₂ NHCH ₂ CH ₂ SH	1	50	0			103,104
C ₆ H ₁₃ NOS	50908	CH ₃ CH ₂ NHCH ₂ CH ₂ SCOCH ₃	27	180	+0			120,240
C ₆ H ₁₃ NOS	61132		1	1000	0			92
C ₆ H ₁₃ NOS ₂	157106	H ₂ NC(CH ₃) ₂ CH ₂ SSC(O)CH ₃		50	0			19
C ₆ H ₁₃ NO ₂ S	474	CH ₃ CH ₂ C(CH ₃)(SH)CH(NH ₂)COOH DL		800	0			3
C ₆ H ₁₃ NO ₂ S	1612	CH ₃ CH ₂ OCONHCH ₂ CH ₂ CH ₂ SH		200	0			27

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{13}NO_2S$	2287	$CH_3CH_2CH_2OCONHCH_2CH_2SH$		300	0(T),0			146
$C_6H_{13}NO_2S$	2734		57	600	0(T),0			72
$C_6H_{13}NO_2S$	90206	$CH_3OCOCH_2CH_2NHCH_2CH_2SH$		800	0(T),0			62
$C_6H_{13}NO_2S$	154256	DL $(CH_3)_2C(SCH_3)CH(NH_2)COOH$		500	0(T),0			142
$C_6H_{13}NO_2S$	157107	$(CH_3CH_2)_2NSC(O)OCH_3$		150	0	300	0	19
$C_6H_{13}NO_2S$	159094	$(CH_3)_3CNHSC(O)OCH_3$		100	0			19

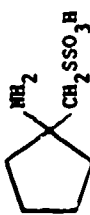
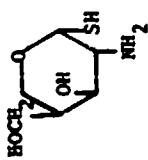
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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{13}NO_2S$	159095	$(CH_3CH_2)_2NC(O)S-O-CH_3$		25	0			19
$C_6H_{13}NO_2S_2$	2622	$CH_3CH_2OONHCH_2CH(SH)CH_2SH$		6	0			179
$C_6H_{13}NO_2S_2$	150081	$H_2NCH_2CH_2SSC(O)OCH(CH_3)_2$	1	15	0			19
$C_6H_{13}NO_2S_2$	157105	$H_2NC(CH_3)_2CH_2SSC(CH_3)_3$	1	30	0			19
$C_6H_{13}NO_2S_2$	177644	$H_2NCH_2CH_2SSCH_2OONCH_2CH_3$	1	200	$+,-,0$	800	$+(T),0$	71
$C_6H_{13}NO_2S_3$	169420	$H_2NCH_2CH_2SSSC(O)OCH(CH_3)_2$	1	15	0	300	0	71
$C_6H_{13}NO_3S$	1969		1	250	0			178

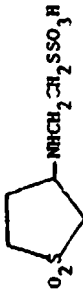
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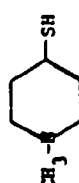
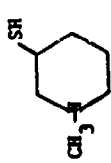
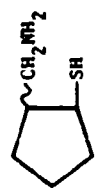
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_5H_{13}NO_3S$	2140		1	800	±.0			180
$C_6H_{13}NO_3S$	2141		1	1000	0			180
$C_6H_{13}NO_3S_2$	1085			100	0	300	0(T).0	11
$C_6H_{13}NO_3S_2$	1725			100	0			143

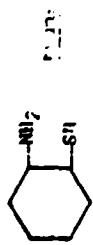
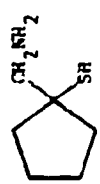
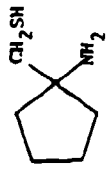
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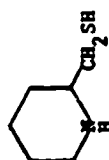
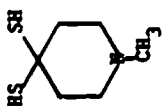
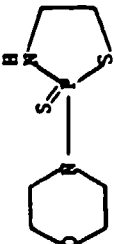
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{13}NO_3S_2$	2649			300	+,-,0	500	0	109
$C_6H_{13}NO_3S_2$	4428	$CH_3C(=NH)S(CH_2)_4SO_3H$		900	+			117
$C_6H_{13}NO_3S_2$	4845			50	0			181
$C_6H_{13}NO_4S$	866			1000	0			182

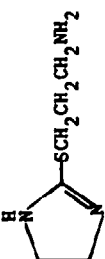
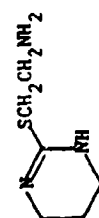
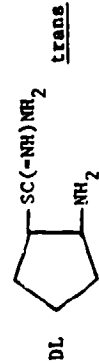
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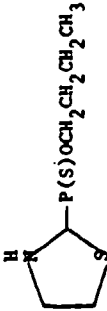
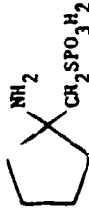
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{13}NO_4S_2$	983	$H_2C=CHOCH_2CH_2NHCH_2CH_2SSO_3H$		35	0			23
$C_6H_{13}NO_4S_2$	1084			500	+	400	0	11
$C_6H_{13}NO_4S_3$	9721	$H_2NCH_2CH_2SC(O)SCH_2CH_2CH_2SO_3H$		600	0			117
$C_6H_{13}NO_5S_2$	2093	$CH_3OCOCH_2CH_2NHCH_2CH_2SSO_3H$		1000	0			23
$C_6H_{13}NO_5S_2$	3117	$CH_3CH_2OCOCH_2NHCH_2CH_2SSO_3H$		2000	0			159
$C_6H_{13}NO_5S_2$	4433	$HOOC(CH_2)_3NHCH_2CH_2SSO_3H$		100	0			147
$C_6H_{13}NO_5S_3$	6924	$H_2C=CHSO_2CH_2CH_2NHCH_2CH_2SSO_3H$		250	0			183
$C_6H_{13}NO_5S_3$	133565			800	0(T), 0			60

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{13}NS$	203			25	0			150
$C_6H_{13}NS$	636		1	80	0			177
$C_6H_{13}NS$	763		1	50	0			184
$C_6H_{13}NS$	813		1	100	0(T), 0			185
$C_6H_{13}NS$	990		1	100	+(T)			49

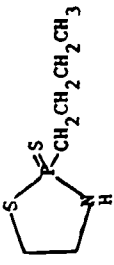
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{13}NS$	991		1	200	+(T).0			49
$C_6H_{13}NS$	2058		1	50	0			211
$C_6H_{13}NS$	2086		1	75	0			115
$C_6H_{13}NS$	2199		1	40	0			150
$C_6H_{13}NS$	3349		1	75	0			109

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{13}NS$	3051			100	0(T).0			150
$C_6H_{13}NS$	88885			40	0			54
$C_6H_{13}NS_2$	390		1	20	0			177
$C_6H_{13}NS_3$	1466	$(CH_3)_2NCH_2CH_2CH_2SC(S)SH$		50	0			25
$C_6H_{13}NS_3$	3854	$CH_3NHC(S)SSC(CH_3)_3$		300	0			138,153
$C_6H_{13}N_2OPS_2$	1971			800	0			186

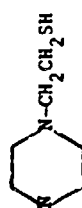
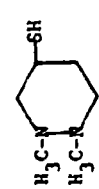
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{13}N_2O_3PS$	102262	$NCCH_2CH(CH_3)NHCH_2CH_2SPO_3H_2$	60.42	400	+(T), 0	800	0	54, 243
$C_6H_{13}N_3OS$	2625	$CH_3CONHCH_2CH_2CH_2SC(=NH)NH_2$	24	450	0(T), 0			179
$C_6H_{13}N_2O_3S_2$	1458	$H_2C=CHCH_2NHC(=NH)NHCH_2CH_2SSO_3H$	42	90	+, 0			52
$C_6H_{13}N_2O_3S_2$	92439	$CH_3CH_2NCOCH_2NHC(=NH)CH_2SSO_3H$		400	0			187
$C_6H_{13}N_3S$	641	$H_2NCH_2CH_2SC(=NH)NHCH_2CH=CH_2$	7	50	0			11
$C_6H_{13}N_3S$	643		7	60	0			11
$C_6H_{13}N_3S$	1745		7	75	0(T), 0			63
$C_6H_{13}N_3S$	2268	DL  <u>trans</u>		200	0(T), 0			152

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{13}N_3S$	2410	$(CF_3)_2C=NNHC(=NH)SCH_2CH_3$	6	20	0			14
$C_6H_{13}N_3S_3$	2182	$CH_3NHC(S)SCH_2CH_2NHCNHCCH_3$		300	0			139
$C_6H_{14}INO_2S$	25422	$HOOCCH(NH_2)CH_2CH_2S^+(CH_3)_2I^-$		1400	0			11
$C_6H_{14}NOP_2S_2$	2102			200	0			95
$C_6H_{14}NO_2PS$	156772		66	75	+,+,0	500	0(T),0	187
$C_6H_{14}NO_3PS$	331J		47	200	+			109

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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{14}NO_5PS$	4474	$CH_3CH_2OCOCH_2NHCH_2CH_2SPO_3H_2$		800	0(T),0			56,243
$C_6H_{14}NO_5PS$	6315	$CH_3OCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		800	0(T),0			56,243
$C_6H_{14}NO_5PS_2$	133564		42,57	500	0			60
$C_6H_{14}NPS_2$	1698			25	0			95
$C_6H_{14}N_2OS$	1997	$H_2NCH_2CH_2CH_2NHCOCH(SH)CH_3$		200	0			9
$C_6H_{14}N_2OS$	1999	$H_2NCH_2CH_2SC(O)CH(NH_2)CH_2CH_3$	2	450	+0			155
$C_6H_{14}N_2OS$	2367	$CH_3CH_2CH_2NHCONHCH_2CH_2SH$		300	0			139

Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose ug/Kg	Rating	
$C_6H_{14}N_2OS$	2861	$H_2NCOCH_2CH_2NHCH_2CH(SH)CH_3$	1	600	+0			107
$C_6H_{14}N_2OS$	150076	$CH_3(CH_2)_3NHCH_2CH_2SNO$	27	50	0			19
$C_6H_{14}N_2O_5S_2$	42405	$(H_2NCH_2CH_2S)_2C(COOH)$	2	1000	0			66
$C_6H_{14}N_2O_5S_2$	157104	$H_2NCH_2CH_2NHCH_2CH_2SSC(O)OCH_3$	1	50	0			19
$C_6H_{14}N_2O_5S_2$	1697	$CH_3CH_2CH_2C(CH_3)NHCH_2CH_2SSO_3H$		180	0			96
$C_6H_{14}N_2O_5S_2$	1750	$CH_3CH_2CH_2C(=NH)NHCH_2CH_2SSO_3H$		75	0			96
$C_6H_{14}N_2O_5S_2$	2726	$CH_3(CH_2)_3NHC(=NH)CH_2SSO_3H$		50	±0			37
$C_6H_{14}N_2O_5S_2$	2727	$(CH_3)_2CHCH_2NHC(=NH)CH_2SSO_3H$		100	+0	200	0(T), 0	37
$C_6H_{14}N_2O_5S_2$	166822	$(CH_3)_3CNHC(=NH)CH_2SSO_3H$		75	0	800	0	148
$C_6H_{14}N_2O_5S_3$	29055	$CH_3S(CH_2)_3NHC(=NH)CH_2SSO_3H$		50	+(T), ±			189
$C_6H_{14}N_2O_5S_2$	3289	$H_2NCOCH(CH_3)CH_2NHCH_2CH_2SSO_3H$		600	±(T), 0			159

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_6H_{14}N_2O_4S_2$	4112	$CH_3OCH_2CH_2CH_2NHC(=NH)CH_2SSO_3H$	42	50	0(T), 0	600	0	98, 190
$C_6H_{14}N_2O_5S_2$	148747	$HOCH_2CH_2OCH_2CH_2NHC(=NH)CH_2SSO_3H$		150	0(T), 0	450	0	98
$C_6H_{14}N_2S$	112		7	50	0			191
$C_6H_{14}N_2S$	2217			50	0			160
$C_6H_{14}N_2S_2$	177	$(CH_3)_2NCH_2CH_2CH_2NHCSSH$		15	0			4
$C_6H_{14}N_2S_2$	2291	$(CH_3)_2CHNHCSSNHCH_2CH_2SH$		125	0			14
$C_6H_{14}N_2O_5S_2$	2615	$H_2NCONNCH_2CH_2SSCH_2CH_2NHCONH_2$		500	+(T), ±			192
$C_6H_{14}N_2O_4S_2$	1115	$HONHCOCH(NH_2)CH_2SCH_2CH(NH_2)CONHOH$		1000	0			2

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₆ H ₁₄ N ₄ O ₄ S ₂	2645	H ₂ NCONHCH ₂ CH ₂ SO ₂ SCH ₂ CH ₂ NHCONH ₂	500	0				135
C ₆ H ₁₄ N ₄ O ₄ S ₂	80395	H ₂ NCONHN=CHCH ₂ CH ₂ NHCH ₂ CH ₂ SSO ₃ H	300	0				145,242
C ₆ H ₁₄ N ₄ S ₂	2107	H ₂ NC(=NH)CH ₂ CH ₂ SSCH ₂ CH ₂ C(=NH)NH ₂	100	+,±		500	+(T),±	38
C ₆ H ₁₄ N ₄ S ₂	2282	H ₂ NC(=NH)SCH ₂ CH ₂ CH ₂ CH ₂ SC(=NH)NH ₂	75	0				193
C ₆ H ₁₄ N ₄ S ₂ Se ₂	90243	H ₂ NCSNHCH ₂ CH ₂ SeSCH ₂ CH ₂ NHCSNH ₂	20	0				42
C ₆ H ₁₄ N ₄ S ₄	36174	H ₂ NCSNHCH ₂ CH ₂ SSCH ₂ CH ₂ NHSCNH ₂	150	±,0		600	±,0	42
C ₆ H ₁₄ O ₄ S ₂	1917	HOCH ₂ CH ₂ SCH ₂ CH ₂ SCH ₂ CH ₂ OH	1000	0				12
C ₆ H ₁₄ O ₂ S ₂	19635	CH ₃ CH(OH)CH ₂ SSCH ₂ CH(OH)CH ₃	400	+,±				3
C ₆ H ₁₄ O ₂ S ₂	99578	HO(CH ₂) ₃ SS(CH ₂) ₃ OH	40	0(T),0				157
C ₆ H ₁₄ O ₂ S ₂	139246	(CH ₃) ₂ CHO-SS-OCH(CH ₃) ₂	30	0				1

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{14}O_4S_4$	747	$CH_3SO_2SCH_2CH_2CH_2CH_2SSO_2CH_3$		25 0				2
$C_6H_{14}IN_2S$	91824	$(CH_3)_2NC-N^+(CH_3)_2I^-$ SCH_3		150 0				11
$C_6H_{15}NOS$	668	$CH_3CH_2CH(OH)CH_2NHCH_2CH_2SH$	1	200 0				103, 104, 194
$C_6H_{15}NOS$	699	$CH_3CH(OH)CH(CH_3)NHCH_2CH_2SH$	1	50 0				102, 103, 104, 194
$C_6H_{15}NOS$	843	$HOOC(CH_3)_2CH_2NHCH_2CH_2SH$	1	150 0				103, 104
$C_6H_{15}NOS$	885	$CH_3OCH_2CH_2CH_2NHCH_2CH_2SH$	1	100 0				102, 103, 104
$C_6H_{15}NOS$	1043	$CH_3CH(OH)CH_2NHCH_2CH_2CH_2SH$	1	250 0				103, 104
$C_6H_{15}NOS$	1056	$HOCH_2CH_2N(CH_3)CH_2CH_2CH_2SH$	1	150 0				103, 104
$C_6H_{15}NOS$	1067	$HOCH_2CH_2N(C_2H_5)CH_2CH_2CH_2SH$	1	100 0				102, 103, 104
$C_6H_{15}NOS$	1104	$HOCH_2CH(C_2H_5)NHCH_2CH_2SH$	1	200 0				102, 103, 104

Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{15}NOS$	1191	$HOCH_2(CH_2)_3NHCH_2CH_2SH$	1	250	0			102
$C_6H_{15}NOS$	1780	$HOCH_2C(CH_3)_2NHCH_2CH_2SH$		125	0			12
$C_6H_{15}NOS$	2277	$CH_3CH(OH)CH_2NHCH_2CH(SH)CH_3$	1	200	0			27
$C_6H_{15}NOS$	3356	$CH_3CH_2OCH_2CH_2NHCH_2CH_2SH$		100	0			195
$C_6H_{15}NOS$	4117	$HOCH_2CH_2CH_2NHCH_2CH(CH_3)SH$	1	600	0(T), 0(T)			107
$C_6H_{15}NOS_2$	1435	$HOCH_2CH_2NHCH_2CH_2SCH_2CH_2SH$	1	300	0			12
$C_6H_{15}NO_2S$	829	$CH_3OCH_2CH(OH)CH_2NHCH_2CH_2SH$	1	325	+0			103, 104
$C_6H_{15}NO_2S$	895	$(HOCH_2CH_2)_2NCH_2CH_2SH$	1	400	0			103, 104
$C_6H_{15}NO_2S$	1788	$(HOCH_2)_2C(CH_3)NHCH_2CH_2SH$		600	0			12
$C_6H_{15}NO_2S$	3844	$HOCH_2CH_2OCH_2CH_2NHCH_2CH_2SH$	1	600	+0	2000	+	103, 104

Molecular Formula	MP Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{15}NO_2S_2$	1447	$(CH_3)_3CSO_2SCH_2CH_2NH_2$		10	0			196
$C_6H_{15}NO_2S_2$	3115	$HSCH_2C(CH_2OH)_2NHCH_2CH_2SH$	1.80	300	0(T), 0(T)			107
$C_6H_{15}NO_2S_3$	77548	$H_2NCH_2CH_2SS(CH_2)_4SO_2H$	1.57	300	+ , ±			197
$C_6H_{15}NO_3S$	1616	$(HOCH_2)_3CNHCH_2CH_2SH$	1	800	+ (T) , ± , 0			103, 104
$C_6H_{15}NO_3S$	2347	$DL\ HOCH_2CH(OH)CH(CH_2OH)NHCH_2CH_2SH$ <u>threo</u>	1	1200	+ , ± , ± , 0	3000	0	103, 104
$C_6H_{15}NO_3S$	2846	$HOCH_2CHOHCHOHCH_2NHCH_2CH_2SH$	1	1500	+ (T) , ±	2000	0	103, 104
$C_6H_{15}NO_3S$	3052	$HOCH_2CH_2NHC(CH_2OH)_2CH_2SH$	1	1500	+ (T) , ± , 0			107
$C_6H_{15}NO_3S$	4123	$(HOCH_2)_2C(OH)CH_2NHCH_2CH_2SH$	1	1250	+ (T) , ± , 0			103, 104
$C_6H_{15}NO_3S_2$	689	$(C_2H_5)_2NCH_2CH_2SSO_3H$		175	0(T), 0			11
$C_6H_{15}NO_3S_2$	802	$(CH_3)_2NCH_2CH(CH_3)CH_2SSO_3H$	57	300	0			198
$C_6H_{15}NO_3S_2$	874	$(CH_3)_3CNHCH_2CH_2SSO_3H$		200	0			161

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{15}NO_3S_2$	1081	$CH_3(CH_2)_3CH(SSO_3H)CH_2NH_2$		100	0			11
$C_6H_{15}NO_3S_2$	1150	$CH_2CH_2CH_2CH(NH_2)CH_2CH_2SSO_3H$		160	0			25
$C_6H_{15}NO_3S_2$	1661	$(CH_3)_2CHCH_2CH(NH_2)CH_2SSO_3H$		150	0			110
$C_6H_{15}NO_3S_2$	1662	$CH_3CH_2CH(CH_3)CH(NH_2)CH_2SSO_3H$		150	0(T), 0			110
$C_6H_{15}NO_3S_2$	1663	$CH_3(CH_2)_3CH(NH_2)CH_2SSO_3K$		75	0			110
$C_6H_{15}NO_3S_2$	2122	$H_2N(CH_2)_6SSO_3H$		300	0			11
$C_6H_{15}NO_3S_2$	2176	$CH_3CH_2CH_2C(NH_2)(CH_3)CH_2SSO_3H$		150	0			109
$C_6H_{15}NO_3S_2$	2244	$CH_3CH_2CH_2CH_2NHCH_2CH_2SSO_3H$		200	0			161
$C_6H_{15}NO_3S_2$	2293	$(CH_3)_2CHC(NH_2)(CH_3)CH_2SSO_3H$		150	0			109
$C_6H_{15}NO_3S_2$	2360	$HO_3S(CH_2)_4NHCH_2CH_2SH$		1000	0			117

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{15}NO_5S_2$	3608	$HO_3S(CH_2)_3NHCH_2CH(CH_3)SH$		2000 0				107
$C_6H_{15}NO_5S_2$	3604	$HOCH_2CH_2OCH_2CH_2NHCH_2CH_2SSO_3H$		800 +, -		1000 0		111
$C_6H_{15}NO_6S_2$	2905	$HOCH_2CH(OH)CH(CH_2OH)NHCH_2CH_2SSO_3H$		1000 + (T), 0				199
$C_6H_{15}NO_6S_2$	3273	$HNCH_2CH(OH)CH(OH)CH_2NHCH_2CH_2SSO_3H$		1600 + (T), 0				111
$C_6H_{15}NO_6S_3$	2453	$HO_3S(CH_2)_4NHCH_2CH_2SSO_3H$	57	1000 0				117
$C_6H_{15}NO_9S_6$	118	$N(CH_2CH_2SSO_3H)_3$	48, 59	600 0 (T), 0 (T), 0				23
$C_6H_{15}NS$	90	$(C_2H_5)_2NHCH_2CH_2SH$		75 0 (T), 0				12
$C_6H_{15}NS$	163	$(CH_2)_2NHCH_2CH(CH_3)CH_2SH$	1	20 0				198
$C_6H_{15}NS$	223	$CH_3CH_2CH(CH_3)NHCH_2CH_2SH$		50 0				12
$C_6H_{15}NS$	224	$CH_3CH_2CH_2CH_2NHCH_2CH_2SH$		60 0				12
$C_6H_{15}NS$	229	$(CH_3)_2CHCH_2NHCH_2CH_2SH$		100 0				12

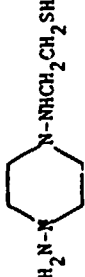
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₆ H ₁₅ NS	624	CH ₃ CH ₂ CH ₂ NHCH ₂ CH ₂ CH ₂ SH	1	62	0			200
C ₆ H ₁₅ NS	886	CH ₃ CH ₂ CH ₂ CH(NH ₂)CH ₂ CH ₂ SH	1	50	0			49
C ₆ H ₁₅ NS	1054	CH ₃ CH ₂ C(NH ₂)(CH ₃)CH ₂ CH ₂ SH	1	75	0			49
C ₆ H ₁₅ NS	1461	H ₂ NCH(CH ₃)CH ₂ C(CH ₃) ₂ SH	1	180	0			114
C ₆ H ₁₅ NS	1512	(CH ₃) ₃ CNCH ₂ CH ₂ SH	27	100	0			12
C ₆ H ₁₅ NS	1568	CH ₂ CH ₂ CH ₂ CH ₂ CH(SH)CH ₂ NH ₂	1	50	0			164
C ₆ H ₁₅ NS	1819	CH ₃ CH ₂ CH ₂ CH(SH)CH(CH ₃)NH ₂	1	50	0			164
C ₆ H ₁₅ NS	1942	CH ₃ CH ₂ CH ₂ CH(NH ₂)CH(CH ₃)SH	1	75	0			27

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₆ H ₁₅ NS	2203	CH ₃ CH(NH ₂)C(SH)(CH ₃)CH ₂ CH ₃	1	75	0			130
C ₆ H ₁₅ NS	2720	CH ₃ CH ₂ CH ₂ C(CH ₃)(NH ₂)CH ₂ SH	1	100	0			109
C ₆ H ₁₅ NS ₂	697	NH(CH ₂ CH ₂ CH ₂ SH) ₂	1	20	0			25
C ₆ H ₁₅ NS ₂	924	H ₂ NCH ₂ CH ₂ SSC(CH ₃) ₃	1	75	0			196, 201
C ₆ H ₁₅ NS ₂	2818	CH ₃ (CH ₂) ₃ SSCH ₂ CH ₂ NH ₂	1	150	0(T), 0			202
C ₆ H ₁₅ N ₃ OS	2249	H ₂ NO(CH ₂) ₅ SC(=NH)NH ₂	6	400	0(T), 0			51
C ₆ H ₁₅ N ₃ O ₃ S ₂	1453	H ₂ NC(=NH)N(CH(CH ₃) ₂)CH ₂ CH ₂ SSO ₃ H		90	0(T), 0			52
C ₆ H ₁₅ N ₃ S	610	H ₂ NCH ₂ CH ₂ SC(=NH)NHCH ₂ CH ₂ CH ₃ CH	7	60	0			11
C ₆ H ₁₅ N ₃ S	612	H ₂ NCH ₂ CH ₂ SC(=NH)NHCH(CH ₃) ₂	7	50	0			11
C ₆ H ₁₅ N ₃ S	1460	H ₂ N(CH ₂) ₅ SC(=NH)NH ₂	7	400	0(T)			11
C ₆ H ₁₅ N ₄ C ₃ P ₂ S ₂	81855	H ₂ NCSNH=CHCH ₂ CH ₂ NHCH ₂ CH ₂ SPO ₃ H ₂	77	10	0			145, 263
C ₆ H ₁₅ N ₅ S ₂	729	[H ₂ NC(=NH)SCH ₂ CH ₂ -] ₂ NH	3	30	0			87

Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₆ H ₁₅ N ₅ S ₂	910	H ₂ NC(-NH)SCH ₂ CH(NH ₂)CH ₂ CH ₂ SC(-NH)NH ₂	8	50	0			87
C ₆ H ₁₆ CuN ₅ S ₂	2338	[H ₂ NC(-NH)NHCH ₂ CH ₂ S] ₂ Cu	42	100	0(T), 0(T)			79
C ₆ H ₁₆ NO ₂ PS ₂	3547	H ₂ NCH ₂ CH ₂ SP(S)(OC ₂ H ₅) ₂	21	0.3	0			54, 241
C ₆ H ₁₆ NO ₂ PS ₂	111504	H ₂ NC(CH ₃) ₂ CH ₂ SP(S)(OCH ₃) ₂	20	3	0			54, 241
C ₆ H ₁₆ NO ₂ PS ₃	186693	H ₂ NCH ₂ CH ₂ S-S-P(S)(OCH ₂ CH ₃) ₂	1	50	T, ±(T)	200	0	70
C ₆ H ₁₆ NO ₃ PS	639	(C ₂ H ₅) ₂ NCH ₂ CH ₂ SPO ₃ H ₂	58	150	0			21
C ₆ H ₁₆ NO ₃ PS	2378	(CH ₃) ₂ CHCH ₂ CH(NH ₂)CH ₂ SPO ₃ H ₂	57.42	100	0			109
C ₆ H ₁₆ NO ₃ PS	2819	CH ₃ CH ₂ CH ₂ C(NH ₂)(CH ₃)CH ₂ SPO ₃ H ₂		400	0(T), 0			109
C ₆ H ₁₆ NO ₃ PS	3679	(CH ₃) ₃ CNCH ₂ CH ₂ SPO ₃ H ₂		25	0			56
C ₆ H ₁₆ NO ₃ PS	4472	CH ₃ CH ₂ CH ₂ CH ₂ NHCH ₂ CH ₂ SPO ₃ H ₂		75	0			56
C ₆ H ₁₆ NO ₃ PS	193701	H ₂ NCH ₂ CH ₂ SP(O)(OH)O(CH ₂) ₃ CH ₃		1000	0	1000	0	120

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{16}NO_5PS$	4122	$(HOCH_2CH_2)_2NCH_2CH_2SPO_3H_2$	58.42	1000	$+, \pm$			111
$C_6H_{16}N_2OS$	1751	$HOCH_2CH_2NHCH_2CH_2NHCH_2CH_2SH$	2	600	$+, 0$			108
$C_6H_{16}N_2O_5S_2$	1151	$H_2NCH_2CH_2CH_2SSO_2(CH_2)_3NH_2$	2	200	0(T)			25
$C_6H_{16}N_2O_5S_2$	2226	$H_2NCH_2CH(CH_3)SSO_2CH(CH_3)CH_2NH_2$	24	200	0(T), 0			27
$C_6H_{16}N_2O_5S_2$	2542	$CH_3NHCH_2CH_2SSO_2CH_2CH_2NHCH_3$		350	0(T), $\pm$			203
$C_6H_{16}N_2O_5S_2$	25878	$H_2NCH_2CH_2CH_2NHCH(CH_3)CH_2SSO_3H$	1	400	0			57
$C_6H_{16}N_2O_5S_2$	25883	$H_2N(CH_2)_4NHCH_2CH_2SSO_3H$	1	300	0(T), 0			57
$C_6H_{16}N_2O_5S_2$	3559	$HOCH_2CH_2NHCH_2CH_2NHCH_2CH_2SSO_3H$	27	1000	0			111
$C_6H_{16}N_2O_5S_4$	150724	$CH_3SO_2NHCH_2CH_2SSCH_2CH_2NHSO_2CH_3$		200	$\pm, 0$			204
$C_6H_{16}N_2O_5S_4$	2932	$HO_3SSCH_2CH_2NHCH(CH_2)_2NHCH_2CH_2SSO_3H$	44	240	0(T), 0			205
$C_6H_{16}N_2O_5S_4$	2933	$HO_3SSCH_2CH(NH_2)CH_2CH_2CH(NH_2)CH_2SSO_3H$		120	0			22

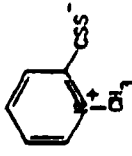
Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{16}N_2S$	760	$CH_3CH_2CH(NH_2)CH_2NHCH_2CH_2SH$	2	120 0				108
$C_6H_{16}N_2S$	1066	$CH_3NHCH_2CH_2NHCH_2CH_2CH_2SH$	2	250 0				108
$C_6H_{16}N_2S$	1727	$H_2N(CH_2)_4NHCH_2CH_2SH$	2	100 0				108
$C_6H_{16}N_2S$	6364	$CH_3CH_2NHCH_2CH_2NHCH_2CH_2SH$	2	150 0				169
$C_6H_{16}N_2S$	33773	$H_2NCH_2CH_2CH_2NHCH(CH_3)CH_2SH$	2	100 0		500 0		57
$C_6H_{16}N_2S$	156788	$H_2NCH_2CH(CH_3)CH_2NHCH_2CH_2SH$	2	200 +,+,0		150 +,+		198
$C_6H_{16}N_2S$	157529	$H_2NCH_2CH_2CH(CH_3)NHCH_2CH_2SH$	2	150 +,+		250 +,+		206
$C_6H_{16}N_2S$	193702	$H_2N(CH_2)_6CH(NH_2)CH_2SH$	2	50 +,+,+,+		150 0,+,+		126
$C_6H_{16}N_2S_2$	1728	$HSCH_2CH_2NHCH_2CH_2NHCH_2CH_2SH$	2	50 0		200 0		207
$C_6H_{16}N_2S_2$	2189	$H_2NCH_2CH(CH_3)SSCH(CH_3)CH_2NH_2$	2	350 +,+		500 0		27

Molecular Formula	L.R. Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{16}N_2S_2$	146073	$(CH_3)_2NCH_2CH_2SSN(CH_3)_2$		20	0			1
$C_6H_{16}N_2S_3$	146109	$H_2NCH_2CH_2CH_2SSSCH_2CH_2CH_2NH_2$	28	20	0			19
$C_6H_{16}N_2S_4$	2474	$H_2NCH_2CH_2SSCH_2CH_2SSCH_2CH_2NH_2$	2	50	0			208
$C_6H_{16}N_4S$	2573		2	600	0			209
$C_6H_{16}N_4O_2S_2$	2183	$H_2NC(=NH)NHCH_2CH_2SSOCH_2CH_2CH_2NHC(=NH)NH_2$	7	150	±, 0			203
$C_6H_{16}N_6S_2$	1089	$H_2NC(=NH)NHCH_2CH_2SSCH_2CH_2NHC(=NH)NH_2$	7	75	+			11
$C_6H_{16}N_6S_2Zn$	2337	$[H_2NC(=NH)NHCH_2CH_2S]_2Zn$	42	75	±, 0			78, 79
$C_6H_{16}N_6S_4$	50909	$H_2NC(=NH)NHCH_2CH_2SSSCH_2CH_2NHC(=NH)NH_2$	45	80	±, ±, 0	500	+	54
$C_6H_{16}N_6S_4$	90242	$H_2NNHCNHCCH_2CH_2SSCH_2CH_2NHCNHCCH_2CH_2NH_2$		100	0			42

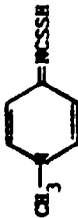
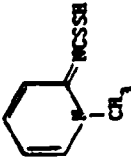
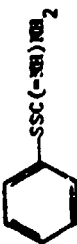
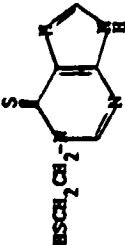
Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{16}N_6S_6$	157103	$H_2NC(=NH)NHCH_2CH_2-(S)_5-CH_2CH_2NHC(=NH)NH_2$	28	50	+, ±	300	+, ±	19
$C_6H_{17}BrN_4S$	1469	$[H_2NC(=NH)NHCH_2CH_2CH_2CH_2CH_2SH]^+ Br^-$		100	0			25
$C_6H_{17}NO_3S_2S_1$	51691	$(CH_3)_3SiCH_2NHCH_2CH_2SSO_3H$		100	0			236
$C_6H_{17}NO_6P_2S$	183339	$(CH_3)_3CNHCH_2CH_2SP(O)(OH)OP(O)(OH)_2$	61, 41	250	+, ±	500	0	70
$C_6H_{17}NO_6S_2$	186692	$[H_3NCH_2CH_2S(CH_2CH_2OH)_2]^{++}SO_4^{--}$		1000	0	1000	0	70
$C_6H_{17}N_2OPS_3$	2196	$CH_3CH_2OP(S)(NHCH_2CH_2SH)_2$		593	0			127
$C_6H_{17}N_2O_2PS$	181197	$(CH_3)_3CNHCH_2CH_2SP(O)(OH)NH_2$	42	1	0	20	0	70
$C_6H_{17}N_2O_3PS$	2822	$H_2N(CH_2)_4NHCH_2CH_2SPO_3H_2$		400	+, ±, 0	600	±	57, 154
$C_5H_{17}N_2O_3PS$	3283	$CH_3CH_2NHCH_2CH_2NHCH_2CH_2SPO_3H_2$	42	500	±(T), ±, 0	400	0	54, 169
$C_6H_{17}N_2O_3PS$	3689	$CH_3NH(CH_2)_3NHCH_2CH_2SPO_3H_2$	42	400	+, ±, ±, 0	1000	±(T), ±, ±	154, 169

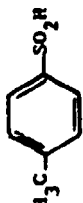
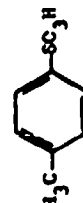
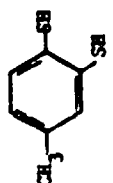
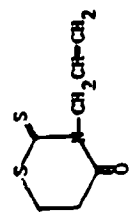
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{17}N_2O_3PS$	33769	$H_2N(CH_2)_3NHCH(CH_3)CH_2SPO_3H_2$	47	260	+			57,154
$C_6H_{17}N_2O_3PS$	44923	$H_2N(CH_2)_3NHCH_2CH_2CH_2SPO_3H_2$	44	300	+,+,+,±	700	+(T),+	57,154,168
$C_6H_{17}N_2O_3PS$	151324	$H_2NCH_2CH(CH_3)CH_2NHCH_2CH_2SPO_3H_2$	44	400	+,+,+,0	500	+,±	154,188
$C_6H_{17}N_2O_3PS$	156787	$H_2NCH_2CH_2CH(CH_3)NHCH_2CH_2SPO_3H_2$	44	300	+,+,0	500	+,+,0	154,188
$C_6H_{17}N_2O_3PS$	176542	$H_2N(CH_2)_4CH(NH_2)CH_2CH_2CH_2$	44	250	+(T),+,+,+,±	500	+,+,+,0	61
$C_6H_{17}N_2O_3PS$	187093	$L(+)-N(CH_2)_4CH(NH_2)CH_2SPO_3H_2$	44	250	+(T),+,+,+,±	500	+,+,+	126
$C_6H_{17}N_2O_4PS$	142489	$H_2NCH_2CH_2CH_2N(CH_2)CH(OH)CH_2SPO_3H_2$	42,77	400	+,+,+,0	600	0	168
$C_6H_{17}N_2O_4PS$	172730	$H_2NCH_2CH(OH)CH_2NHCH_2CH_2CH_2SPO_3H_2$	42	600	+,±			168
$C_6H_{17}N_3S$	172	$H_2NCH_2CH_2NHCH_2CH_2NHCH_2CH_2SH$	3	300	+,±	1500	0	211
$C_6H_{17}N_4O_3PS$	181378	$H_2NC(=NH)NH(CH_2)_3NHCH_2CH_2CH_2SPO_3H_2$	42	100	+(T),+,+	400	0(T),0	61

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_6H_{18}CoN_3S_3$	1170	$(H_2NCH_2CH_2S)_3Co$		160	+			76
$C_6H_{18}N_3O_2P_2S_2$	8713	$F_2O_3PSC_2H_2NHC_2H_2NHCH_2CH_2SPO_3H_3$	46,54	400	0(T),0			205
$C_6H_{18}N_3OPS_2$	2259	$(CH_3)_7NH(O)(NHCH_2CH_2SH)_2$		300	0			127
$C_6H_{18}N_3PS_3$	1816	$(CH_3)_2NP(S)(NHCH_2CH_2SH)_2$		100	0			186
$C_6H_{18}N_3PS_4$	2313	$(RSC_2H_2NH)_3PS$		150	0			127
$C_7H_6N_2S_2$	1923		1	800	0			3
C_7H_7NOS	146110			60	0			1

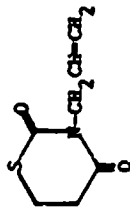
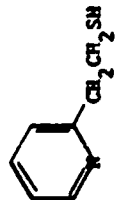
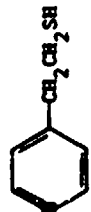
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C_7H_7NS	35			200 0				11
$C_7H_7NS_2$	323		60	200 0(T), 0				4
$C_7H_7NS_2$	176614			100 0		400 0		129
$C_7H_8F_7NOS$	2327	$CF_3CF_2CF_2CONHCH_2CH(CH_3)SH$		250 0				179
$C_7H_8N_2OS$	1831			50 0				212

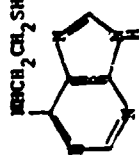
137

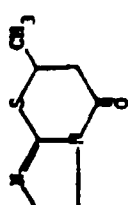
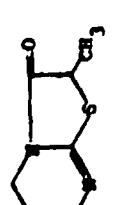
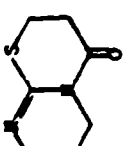
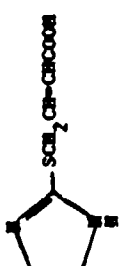
Molecular Formula	YR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_8N_2S_2$	2271		70	10	0(T).0			15
$C_7H_8N_2S_2$	2272		69	200	0			15
$C_7H_8N_2S_2$	8053		27	20	0			88
$C_7H_8N_4S_2$	1491			200	0			213

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_8O_2S$	454		57	2500	0(T), 0			14
$C_7H_8O_3S$	17637		57	4000	0(T), ±			11
$C_7H_8S_2$	50			50	0			3
C_7H_9NOS	1001		1	150	0			128
$C_7H_9NOS_2$	2583			600	0(T), 0			64,237

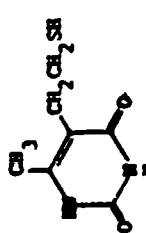
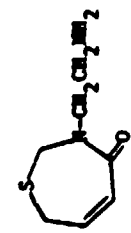
139

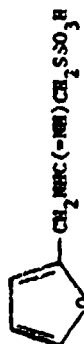
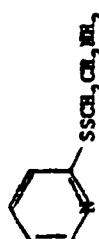
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_9NO_2S$	2584			400.0				169
$C_7H_9NO_3S_2$	996		57	400.0				128
C_7H_9NS	206		1	250.0 (T).0				214
C_7H_9NS	207		1	100.0 (T).0				214

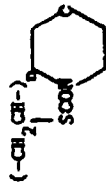
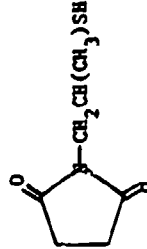
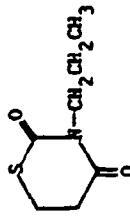
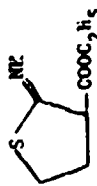
Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_9NS_2$	928			600	0			215
$C_7H_9N_3S$	784		24	200	0(T), 0			216
$C_7H_9N_3S$	795		2	10	0			26
$C_7H_9N_3S$	154			150	0			170
$C_7H_{10}F_6N_2OS$	98117	$H_2NC(CF_3)_2NHCCH_2CH_2SOOCH_3$		90	0			240, 54

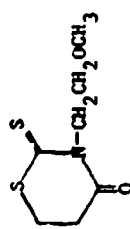
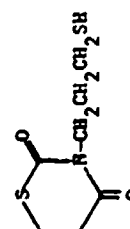
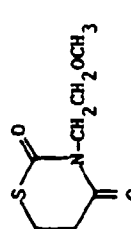
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{10}F_7NO_8S$	2938	$CF_3CF_2CF_2CSO_2CH_2N(CH_2CH_2)_2SH$		100	0			77
$C_7H_{10}N_2O_8S$	1060		1	900	+(T)			131
$C_7H_{10}N_2O_8S$	1557		1	750	0			131
$C_7H_{10}N_2O_8S$	1834		6	500	0			236
$C_7H_{10}N_2O_8S$	1059		6	750	0			63

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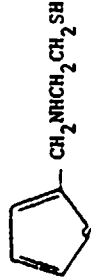
Molecular Formulas	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{10}N_2O_2S$	1599			400	0(T), 0(T)			128
$C_7H_{10}N_2O_2S$	2322		6	1000	0			63
$C_7H_{10}N_2O_2S_3$	33764			50	+(T), 0(T)	150	0	189
$C_7H_8N_2O_4S$	197			500	0			217

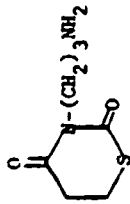
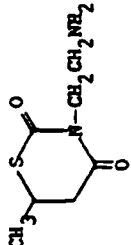
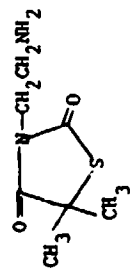
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{10}N_2O_4S_2$	25211			1000	0			189
$C_7H_{10}N_2S$	1829			100	0			99
$C_7H_{10}N_2S_2$	2251		2	25	0			196
$C_7H_{10}O_2S$	104707			75	0(T),0			157
$C_7H_{10}NOS_2$	1715			200	0			64

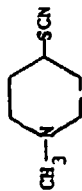
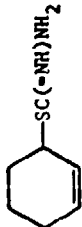
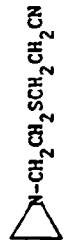
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{11}NO_2S$	1481			500	0			133
$C_7H_{11}NO_2S$	1538			600	0			179
$C_7H_{11}NO_2S$	2065			200	0			64
$C_7H_{11}NO_2S$	2424			200	0			12

Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{11}NO_2S_2$	2147			750	0			64
$C_7H_{11}NO_2S_2$	2358	$H_2O=CHCH_2NHCSCH_2CH_2COOH$		187	0			64, 237
$C_7H_{11}NO_2S_2$	2568			200	0			237
$C_7H_{11}NO_3S$	2357			75	0			64
$C_7H_{11}NO_3S$	2361	$H_2O=CHCH_2NHCSCH_2CH_2COOH$		60	0			64

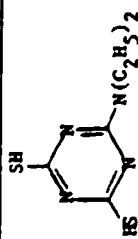
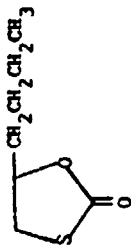
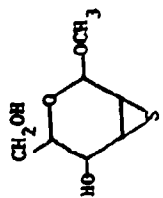
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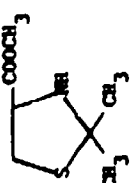
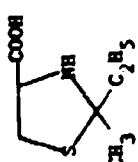
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{11}NS$	2270		1	200	0			152
$C_7H_{11}NS_2$	931			75	0			215
$C_7H_{11}NS_2$	3691			3	0			109
$C_7H_{12}N_2OS$	4120	$NCCH_2CH_2N(COCH_3)CH_2CH_2SH$		200	0			195
$C_7H_{12}N_2OS$	102264	$NCCH_2CH_2NNHCH_2CH_2SC(O)CH_3$	27	180	0(T), 0			240, 54

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{12}N_2O_2S$	1576		6	1000 0				236
$C_7H_{12}N_2O_2S'$	1679		1	500 0				63
$C_7H_{12}N_2O_2S$	2321		6	1000 0(T), 0				63
$C_7H_{12}N_2S$	788		1	50 0				11

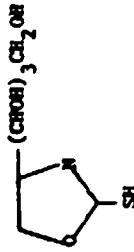
Molecular Formula	WR Number	Structure	Salt Form	Antiradication Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{12}N_2S$	826		1	40	0			184
$C_7H_{12}N_2S$	840		6	25	0			11
$C_7H_{12}N_2S$	169418			40	0			71
$C_7H_{12}N_2S_2$	2365	$(CH_3)_2C=NNHC(S)SCH_2CH=CH_2$		105	0			14
$C_7H_{12}N_2S_2$	146106			400	0(T), 0			43

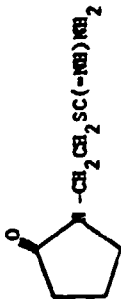
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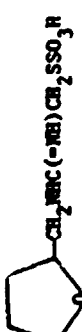
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{12}N_4S_2$	123			500	0			23
$C_7H_{12}OS$	897			90	0			35
$C_7H_{12}O_2S$	104708			100	0			157
$C_7H_{12}O_4S$	340	 <u>α-D-allo</u>		400	0			218

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{13}F_3NO_5PS$	4799	$CF_3CH_2COOCH_2CH_2N(CH_2CH_2SPO_3H)_2$		500	±, 0			56, 243
$C_7H_{13}NOS$	1262	$(C_2H_5)_2NC(O)SCH=CH_2$		350	0 (T)			133
$C_7H_{13}NOS$	1263	$(-CH_2-\overset{\text{CH-}}{\underset{\text{SO}_2N(C_2H_5)_2}{\text{CH}}})_n$		1500	0			133
$C_7H_{13}NOS_2$	183370	$H_2NCH(CH_3)CH_2SC(S)CH_2OC_2H_5$	27	40	0	200	0	70
$C_7H_{13}NO_2S$	2018		1	800	0			35
$C_7H_{13}NO_2S$	2806		1	2000	+(T), ±			219

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₇ H ₁₃ NO ₂ S ₂	1533	CH ₃ CH ₂ CH ₂ NHCSSCH ₂ CH ₂ COOH		300 0				64
C ₇ H ₁₃ NO ₂ S ₂	1686	CH ₃ CH ₂ COOCH ₂ NHCSSCH ₂ CH ₃		1050 0				20
C ₇ H ₁₃ NO ₂ S ₄	189179	H ₂ NCH ₂ CH ₂ SC(S)S-S-COOCH(CH ₃) ₂	1	25 0		300 0		90
C ₇ H ₁₃ NO ₃ S	195	CH ₃ COOCH ₂ CH ₂ SCCH ₂ CH(NH ₂)COOH		1000 0				217
C ₇ H ₁₃ NO ₃ S	1155	HOH ₂ COCH ₂ S- 		593 0				9
C ₇ H ₁₃ NO ₃ S	2064	CH ₃ CH ₂ CH ₂ NHC(=O)SCH ₂ CH ₂ COOH		800 0				64
C ₇ H ₁₃ NO ₃ S ₂	2148	CH ₃ OCH ₂ CH ₂ NHCSSCH ₂ CH ₂ COOH		333 0				64
C ₇ H ₁₃ NO ₃ S ₂	2558	HOOCCH ₂ CH ₂ SO ₂ NHCH ₂ CH ₂ CH ₂ SH		200 0(T), 0				237
C ₇ H ₁₃ NO ₃ S ₂	40333	H ₂ NCH ₂ CH ₂ SC(O)S(CH ₂) ₃ COOH	1	1000 +(T), 0		1000 0		156
C ₇ H ₁₃ NO ₃ S ₂	162457	CH ₃ CONHCH ₂ CH ₂ SSCH ₂ CH ₂ COOH		100 0				175
C ₇ H ₁₃ NO ₄ S	192	CH ₃ COOCH ₂ CH ₂ SCCH ₂ CH(NH ₂)COOH		400 0				217

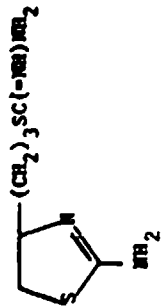
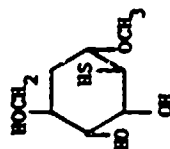
Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{13}NO_5S$	2149	$CH_3OCH_2CH_2NHC(O)SCH_2CH_2COOH$		444	0			64
$C_7H_{13}NO_5S$	189	 <u>D-palactate</u>		2000	0			220
$C_7H_{13}NO_5S$	206	$CH_3OOCH_2CH_2S(O)CH_2CF(NH_2)COOH$		100	0			217
$C_7H_{13}NO_6S$	199	$CH_3OOCH_2CH_2SO_2CH_2CH(NH_2)COOH$		760	0			217
$C_7H_{13}NS$	2269		1	450	0(T), 0			152
$C_7H_{13}NS$	3603		6	560	+(T), +			152

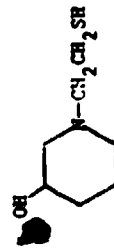
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{13}NS_2$	180548	$(C_2H_5)_2NCSSCH=CH_2$		1000	0(T), 0			30 ;
$C_7H_{13}N_3OS$	1468		1	300	0(T)			25
$C_7H_{13}N_3OS_3$	2506	$CH_3CH_2OC(S)SCH_2C(CH_3)=NNHCSNH_2$		15	0			14
$C_7H_{13}N_3O_2S_2$	2438	$CH_3CH_2OC(S)SCH_2C(CH_3)=NNHCOHCH_2$		400	0			14
$C_7H_{13}N_3S_3$	2157	$H_2C=CHCH_2NHC(=NH)NHCH_2CH_2SC(S)SH$		10	0			31
$C_7H_{14}F_3NOS$	3038	$HOCH_2CH_2CH(CF_3)CH_2NHCCH_2CH_2SH$		150	0			77
$C_7H_{14}N_2OS$	1125	$(CH_3)_2N=CHCH_2CH_2SC(O)CH_3$		50	0			25

Molecular Formula	UR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{14}N_2O_5S_2$	40337	$NOCH_2CH_2NHC(CH_3)_2CH_2SSO_3H$		1000 0				57
$C_7H_{14}N_2O_5S_2$	5136			1000 0				117
$C_7H_{14}N_2O_5S_2$	6399			25 0				190
$C_7H_{14}N_2O_5S_2$	7470			100 0				119 .299
$C_7H_{14}N_2S$	618			100 0(TT).0				4

156

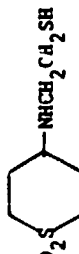
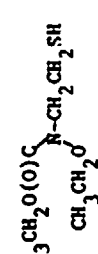
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{14}N_2S$	841		6	30	0			11
$C_7H_{14}N_2S$	1126	$H_2C=C(CH_3)CH_2SC(=NCH_3)NCH_3$	1	12	0			63
$C_7H_{14}N_2S$	2213			187	0			99, 160
$C_7H_{14}N_2S$	35982	$NOCH_2CH_2NHC(CH_3)_2CH_2SH$	27.42	200	0			37
$C_7H_{14}N_2S$	41261	$NOCH_2CH_2NHCCH_2C(CH_3)_2SH$		320	± 0			54
$C_7H_{14}N_2S_2$	2911			100	± 0			92

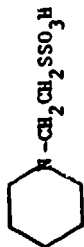
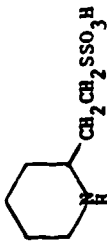
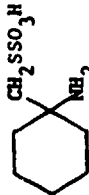
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{14}N_4O_4S_2$	121451		42	100	0 (T), 0			221
$C_7H_{14}N_4S_2$	1248		6.22	50	0			87
$C_7H_{14}O_3S_2$	169404	$(CH_3)_2C(SO_2C(CH_3)_2)S-S-OCH(CH_3)_2$		50	0, ±	200	0	71
$C_7H_{14}O_5S$	341			240	0			220
$C_7H_{15}NOS$	552	$H_2C=CHC(CH_3)(OH)CH_2N(CH_2CH_2)_2SH$	1	30	0			194

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{15}NOS$	1188	$H_2NCH_2CH_2SC(O)(CH_2)_3CH_3$	1	400	+			81
$C_7H_{15}NOS$	1244		1	150	0			102
$C_7H_{15}NOS$	1838	$H_2NCH_2CH_2S-$ 		200	0			222
$C_7H_{15}NOS$	2024	$CH_3CH_2CH_2CH(NHCOH)CH(CH_3)SH$		150	0			27
$C_7H_{15}NOS$	2025	$CH_3CH_2CH_2CH(NHCOH)CH_2CH_2SH$		300	0(T), 0			27
$C_7H_{15}NOS$	2206	$(C_2H_5)_2C(SH)C(CH_3)_2NOH$		50	0			130
$C_7H_{15}NOS$	2393		1	150	0			124

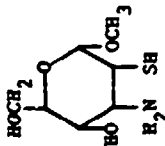
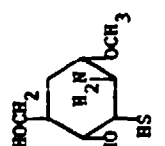
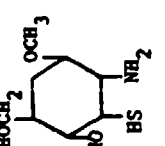
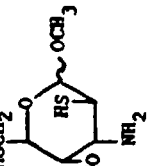
159

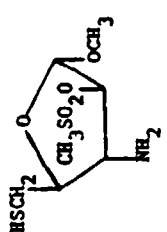
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₇ H ₁₅ NOS	2564	(C ₂ H ₅) ₂ NCH ₂ SC(O)CH ₃		100 0				150
C ₇ H ₁₅ NOS	138414		1	400 0				43
C ₇ H ₁₅ NOS ₂	4789	CH ₃ C(O)SCH ₂ CH ₂ NHCH ₂ C(CH ₃) ₂ SH	27	100 $\pm$, +		300 0		54,240
C ₇ H ₁₅ NOS ₂	1590/G	(C ₂ H ₅) ₂ NC(O)SSCH ₂ CH ₃		56 0				19
C ₇ H ₁₅ NO ₂ S	1782			800 0				12
C ₇ H ₁₅ NO ₂ S	2284	CH ₃ (CH ₂) ₃ OC(=O)NHCCH ₂ CH ₂ SH		200 0				146
C ₇ H ₁₅ NO ₂ S	2471	CH ₃ CH ₂ OC(=O)CH ₂ CH ₂ NHCH ₂ CH ₂ SH	24	1000 $\pm$ (T), 0				141,159
C ₇ H ₁₅ NO ₂ S	2875	CH ₃ COOCH(CH ₃)CH ₂ NHCH ₂ CH ₂ SH	27	1000 0				159

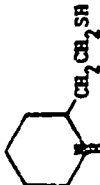
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₇ H ₁₅ NO ₂ S	2928	CH ₃ OCOCH ₂ CH(CH ₃)NHCH ₂ CH ₂ SH	27	1000 0				159
C ₇ H ₁₅ NO ₂ S ₂	99603		1	400 0(T), 0				223
C ₇ H ₁₅ NO ₂ S ₂	181195	H ₂ NCH ₂ CH ₂ SSCH ₂ CH ₂ COOC ₂ H ₅	27	50 0		300 0		70
C ₇ H ₁₅ NO ₂ S ₃	169419	H ₂ NCH(CH ₃)CH ₂ S-S-SCOOCH(CH ₃) ₂	1	15 0(T), 0		200 0(T), 0		71
C ₇ H ₁₅ NO ₂ S ₄	134154	(CH ₃) ₂ NC(S)SS(CH ₂) ₄ SO ₂ H	57	30 0				225
C ₇ H ₁₅ NO ₃ S	2130	(CH ₃ O) ₂ CHCONHCH ₂ CH(CH ₃)SH		800 0				27
C ₇ H ₁₅ NO ₃ S	4556			200 0(T), 0(T)				106
C ₇ H ₁₅ NO ₃ S	4660	CH ₃ CH ₂ ONHCH ₂ CH ₂ SC(O)OCH ₂ CH ₃		600 0(T), 0				106

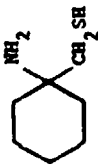
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{15}NO_3S_2$	1082			60 $\pm$ 0		180	0(T), 0	11
$C_7H_{15}NO_3S_2$	1110			50 0				143
$C_7H_{15}NO_3S_2$	2579			200 $\pm$ 0				199
$C_7H_{15}NO_3S_2$	3823	$H_2C=CH(CH_2)_3NHCH_2CH_2SSO_3H$		100 0				226
$C_7H_{15}NO_3S_2$	5879			100 0				181

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Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				-P-		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{15}NO_4S$	877		1	1000	+(T), 0			227
$C_7H_{15}NO_4S$	1620		1	400	0(T), 0			228
$C_7H_{15}NO_4S$	2677		1	300	0			229
$C_7H_{15}NO_4S$	159927			75	0			218
$C_7H_{15}NO_4S_3$	6371	$H_2NCH_2CH_2SC(O)S(CH_2)_4SO_3H$		250	0			121

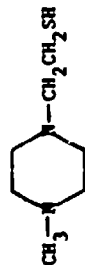
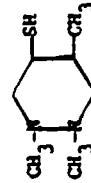
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{15}NO_5S_2$	2473		1	900 0				178
$C_7H_{15}NO_5S_2$	2948	$CH_3OCOCH(CH_3)CH_2NHCH_2CH_2SSO_3H$		800 0				159
$C_7H_{15}NO_5S_2$	3597	$HOOC(CH_2)_4NHCH_2CH_2SSO_3H$		800 0				147
$C_7H_{15}NO_5S_2$	3839	$CH_3OCOCH_2CH(CH_3)NHCH_2CH_2SSO_3H$		1250 0(T), 0(T)				56,242
$C_7H_{15}NO_5S_2$	5820	$CH_3CH_2OC(O)CH_2CH_2NHCH_2CH_2SSO_3H$		2000 0				56,242
$C_7H_{15}NO_5S_3$	92967			500 +, 0		800 0		223
$C_7H_{15}NS$	12		1	30 0				11

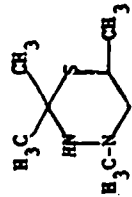
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{15}NS$	625		1	100	0			185
$C_7H_{15}NS$	741		1	15	0			185
$C_7H_{15}NS$	1130			23	0			143
$C_7H_{15}NS$	1987		1	30	0			115
$C_7H_{15}NS$	2641		1	50	0			124

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{15}NS$	2648		1	100	0			109
$C_7H_{15}NS_2$	2508	$CH_3CH_2N=C(SC_2H_5)_2$		100	0			14
$C_7H_{15}NS_2$	108515		6	70	0			223
$C_7H_{15}NS_3$	2642	$(C_2H_5)_2NCH_2CH_2SC(S)SH$		100	0			31
$C_7H_{15}NS_3$	3114	$(CH_3)_2NC(S)S-SC(CH_3)_3$		500	+			138
$C_7H_{15}NS_3$	199789	$H_2NC(CH_3)_2CH_2SC(S)SCH_2CH_3$	27	20	+, ±	100	0	120
$C_7H_{15}N_2O_4PS$	46359	$NCCH_2CH_2OCH_2CH_2NHCH_2CH_2SPO_3H_2$	36	500	±(T), ±(T)	1000	±	145, 243

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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{15}N_3S$	646			400	0			129
$C_7H_{15}N_3S_3$	1763	$(CH_3)_2NC(=NCH_3)NHCH_2CH_2SC(S)SH$		25	0			31
$C_7H_{16}NO_5PS$ 168	6316	$CH_3CH_2OCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		1000	0			56,243
$C_7H_{16}NO_5PS$	99604		42	400	+0			223
$C_7H_{16}N_2OS$	2039	$CH_3(CH_2)_3NHCOHCH_2CH_2SH$		200	0			139
$C_7H_{16}N_2OS$	2286	$(CH_3)_3CNHCOHCH_2CH_2SH$		300	0			14
$C_7H_{16}N_2OS$	108542	$H_2NCOCH_2CH_2NHCH_2C(CH_3)_2SH$	27	800	0(T), 0			54
$C_7H_{16}N_2OS$	132190	$H_2NCOCH_2CH_2NHC(CH_3)_2CH_2SH$	27	130	0			1

Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{16}N_2OS$	150248	$(CH_3)_3CNHCSCNCH_2CH_2OH$		500	+, +, +, 0	200	0	238
$C_7H_{16}N_2O_2S$	159573	$HOOCCH(NH_2)(CH_2)_3NHCCH_2CH_2SH$	2, 42	300	+, +, 0	1000	0	230
$C_7H_{16}N_2O_2S_2$	157101	$H_2N(CH_2)_3NHCCH_2CH_2SSC(O)OCH_3$	2	75	+, 0			19
$C_7H_{16}N_2O_3S_2$	2096	$CH_3CH_2CH_2C(=NH)NH(CH_2)_3SSO_3H$		100	0			96
$C_7H_{16}N_2O_3S_2$	2947	$CH_3CH_2CH_2NHC(=NH)CH(CH_3)SSO_3H$		100	0(T), 0	200	0	37
$C_7H_{16}N_2O_3S_2$	3308	$(CH_3)_2CHCH_2CH_2NHC(=NH)CH_2SSO_3H$		40	+(T), 0	125	+	190, 221, 239
$C_7H_{16}N_2O_3S_2$	166818	$CH_3(CH_2)_3N(CH_3)C(=NH)CH_2SSO_3H$		10	0(T), 0	75	0	148
$C_7H_{16}N_2S$	233			100	0			12
$C_7H_{16}N_2S$	2214			187	0			160

Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{16}N_2S$	88311			100 0				59
$C_7H_{16}N_2S_2$	176	$(C_2H_5)_2NCH_2CH_2NHCSSH$		25 0				4
$C_7H_{16}N_2S_2$	936	$(C_2H_5)_2NCSSCH_2CH_2NH_2$	1	50 0				4,40
$C_7H_{16}N_2S_2$	2243	$CH_3(CH_2)_3NHCNHCCH_2CH_2SH$		150 0				14
$C_7H_{16}N_2S_2$	88899	$(CH_3)_3CNHCCH_2CH_2SCSNH_2$	27	50 0				145
$C_7H_{16}N_2S_4$	1464	$H_2N(CH_2)_3SS(CH_2)_3NHCSSH$		800 ±(T)				25
$C_7H_{16}N_3O_3PS$	46358	$HOCH_2CH_2NHCCH_2CH_2NHCCH_2CH_2SPO_3H_2$	42	100 0(T).0				145,243
$C_7H_{17}NOS$	1064	$CH_3CH_2CHOHCCH_2NHCCH_2CH_2CH_2SH$	1	150 0(T)				103,104,231
$C_7H_{17}NOS$	1096	$(CH_3)_2CEN(CH_2CH_2OH)CH_2CH_2SH$	1	50 0				103,104,207

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Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₇ H ₁₇ NOS	1791	CH ₃ (CH ₂) ₃ NHCH(CH ₂ OH)CH ₂ SH		250 0				12
C ₇ H ₁₇ NOS	2455	(CH ₃) ₂ C(OPh)CH ₂ NHCH ₂ CH(CH ₃)SH	1	300 0				179
C ₇ H ₁₇ NOS	2469	HOCH ₂ (CH ₂) ₄ NHCH ₂ CH ₂ SH	1	200 +, 0		500 0		103, 104, 111
C ₇ H ₁₇ NOS	2570	CH ₃ CH ₂ O(CH ₂) ₃ NHCH ₂ CH ₂ SH	1	75 0				124
C ₇ H ₁₇ NOS	2816	CH ₃ CH(CH ₃)CH(CH ₂ OH)NHCH ₂ CH ₂ SH	1	90 0				124
C ₇ H ₁₇ NOS	2863	CH ₃ (CH ₂) ₂ CH(CH ₂ OH)NHCH ₂ CH ₂ SH	1	100 0(T), 0				124
C ₇ H ₁₇ NO ₂ S	921	HOCH ₂ (CH ₂) ₂ N(CH ₂ CH ₂ OH)CH ₂ CH ₂ SH	1	350 0				231
C ₇ H ₁₇ NO ₂ S	2003	CH ₃ CH ₂ C(CH ₂ OH) ₂ NHCH ₂ CH ₂ SH	1	375 0				103, 104, 211
C ₇ H ₁₇ NO ₂ S	2454	(HOCH ₂ CH ₂) ₂ NCH ₂ CH(CH ₃)SH	1	500 0				179
C ₇ H ₁₇ NO ₂ S	2664	HOCH ₂ CH ₂ CH ₂ CH(OH)CH ₂ NHCH ₂ CH ₂ SH	1	600 +, +		1000 0		130, 104, 199
C ₇ H ₁₇ NO ₂ S	3297	(CH ₃) ₂ C(CH ₃)CH(OH)CH ₂ NHCH ₂ CH ₂ SH	1	200 0(T), 0				103, 104, 111

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.F.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{17}NO_3S$	2496	$HOCH_2CH_2OCH_2CHOHCH_2NHCH_2CH_2SH_2$	1	1000	+,±	2500	+	103,104,211
$C_7H_{17}NO_3S$	3345	$HOCH_2CHOHCH_2OCH_2CH_2NHCH_2CH_2SH$	1	1000	+,±,0	1000	0	103,104,111
$C_7H_{17}NO_3S_2$	1093	$(C_2H_5)_2NCH_2CH_2CH_2SSO_3H$		150	0			23
$C_7H_{17}NO_3S_2$	1100	$CH_3(CH_2)_3CH(CH_2NH_2)CH_2SSO_3H$		125	0			162
$C_7H_{17}NO_3S_2$	1101	$CH_3CH_2CH(CH_3)CH(CH_2NH_2)CH_2SSO_3H$		50	0			162
$C_7H_{17}NO_3S_2$	1144	$CH_3(CH_2)_4CH(SSO_3H)CH_2NH_2$		125	0			21
$C_7H_{17}NO_3S_2$	2177	$CH_3(CH_2)_3C(NH_2)(CH_3)CH_2SSO_3H$		200	0(T),0			109
$C_7H_{17}NO_3S_2$	2178	$(CH_3)_2CHCH_2C(NH_2)(CH_3)CH_2SSO_3H$		150	0(T),0			109
$C_7H_{17}NO_3S_2$	2341	$CH_3(CH_2)_4NHCH_2CH_2SSO_3H$		50	0			161,239
$C_7H_{17}NO_3S_2$	8165	$(CH_3)_3CCH_2NHCH_2CH_2SSO_3H$		200	0			181,239
$C_7H_{17}NO_3S_2S_1$	53377	$H_2C=CHS_1(CH_3)_2CH_2NHCH_2CH_2SSO_3H$		100	0			234

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₇ H ₁₇ NO ₄ S ₂	2969	CH ₃ O(CH ₂) ₄ NHCH ₂ CH ₂ SSO ₃ H		250 0				226
C ₇ H ₁₇ NO ₄ S ₂	157408	CH ₃ (CH ₂) ₃ NHCH ₂ CHOHCH ₂ SSO ₃ H		200 $\pm$		300 0		58
C ₇ H ₁₇ NO ₅ S ₂	3093	(CH ₃) ₂ C(OH)CH(OH)CH ₂ NHCH ₂ CH ₂ SSO ₃ H	57	1000 $\pm$ (T).0				111
C ₇ H ₁₇ NO ₅ S ₂	3435	HSCH ₂ C(CH ₂ OH) ₂ NHCH ₂ CH ₂ CH ₂ SO ₃ H		1000 0				107
C ₇ H ₁₇ NO ₅ S ₃	6656	(CH ₃) ₂ CHSO ₂ CH ₂ CH ₂ NHCH ₂ CH ₂ SSO ₃ H		400 0				183
C ₇ H ₁₇ NO ₅ S ₃	8629	CH ₃ CH ₂ CH ₂ SO ₂ CH ₂ CH ₂ NHCH ₂ CH ₂ SSO ₃ H		600 0				183
C ₇ H ₁₇ NO ₆ S ₂	2968	HOCH ₂ CH ₂ OCH ₂ CH(OH)CH ₂ NHCH ₂ CH ₂ SSO ₃ H		1000 $\pm$.0		5000 0		199
C ₇ H ₁₇ NO ₆ S ₂	3607	HOCH ₂ CH(OH)CH ₂ OCH ₂ CH ₂ NHCH ₂ CH ₂ SSO ₃ H		1500 $\pm$.0				111
C ₇ H ₁₇ NS	162	(C ₂ H ₅) ₂ NCH ₂ CH ₂ CH ₂ SH	1	50 0				198
C ₇ H ₁₇ NS	357	(CH ₃) ₂ NCH ₂ CH(C ₂ H ₅)CH ₂ SH	1	10 0				198

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{17}NS$	26331	$[(CH_3)_2CH]_2NCH_2SH$	1	80	0			232
$C_7H_{17}NS$	1519	$CH_3(CH_2)_3NHCH_2CH(CH_3)SH$		75	0			12
$C_7H_{17}NS$	1569	$CH_3(CH_2)_4CH(SH)CH_2NH_2$	1	50	0			1
$C_7H_{17}NS$	2004	$CH_3CH_2CH_2CH(SH)CH(NH_2)CH_2CH_3$	1	25	0			1
$C_7H_{17}NS$	2091	$CH_3(CH_2)_3CH(SH)CH(CH_3)NH_2$	1	40	0			1
$C_7H_{17}NS$	2205	$(C_2H_5)_2C(SH)CH(CH_3)NH_2$	1	75	0			130
$C_7H_{17}NS$	2316	$CH_3(CH_2)_4NHCH_2CH_2SH$	1	30	0			211
$C_7H_{17}N_2O_5PS$	181190	$H_2NCH_2CH(OCOCH_3)CH_2NHCH_2CH_2SPO_3H_2$	43	500	+, +	1000	0	168
$C_7H_{17}N_2OS$	2343	$H_2NOCH_2(CH_2)_4CH_2SC(=NH)NH_2$	7	50	0			51

Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Hg/Kg	Rating	Dose Hg/Kg	Rating	
$C_7H_{17}N_3O_3S_2$	4376	$CH_3(CH_2)_3NCH_2CH_2SSO_3H$ C(=NH)NH ₂		20	0			315
$C_7H_{17}N_3S$	4312	$CH_3(CH_2)_3NCH_2CH_2SH$ C(=NH)NH ₂	24	32	0			312
$C_7H_{17}N_3S_2$	116731	$(CH_3)_3CNCH_2CH_2SSC(=NH)NH_2$	28,42	5	0			54

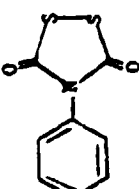
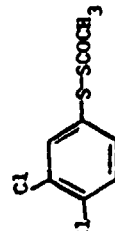
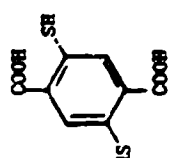
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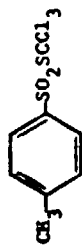
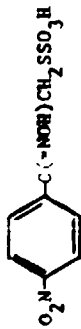
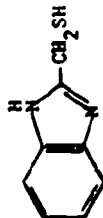
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{17}N_2S_2$	674	$H_2NCH(CH_2CH_2SC(=NH)NH_2)_2$	8	38 0				151
$C_7H_{18}BrN_3S$	81583	$(CH_3)_2NC(SCH_2CH_2NH_2)=N^+(CH_3)_2Br^-$	6	5 0				11
$C_7H_{18}NO_2PS$	181196	$(CH_3)_3CNHCH_2CH_2SP(O)(OH)CH_3$		0.1 0		2 0		70
$C_7H_{18}NO_2PS_2$	2255	$(C_2H_5O)_2P(S)NHCH_2CH(CH_3)SH$		250 0				233
$C_7H_{18}NO_2PS_2$	9061	$CH_3NHCH_2CH_2SP(S)(OC_2H_5)_2$	21	0.25 0				56,241
$C_7H_{18}N_2OS$	1079	$CH_3CH(OH)CH_2NHCH_2CH_2NHCH_2CH_2SH$	2	500 $\pm$				108,207
$C_7H_{18}N_2OS$	2153	$HOCH_2CH_2NH(CH_2)_3NHCH_2CH_2SH$	2	175 $+$				108,111
$C_7H_{18}N_2OS$	3100	$HOCH_2(CH_2)_2NHCH_2CH_2NHCH_2CH_2SH$	2	400 $\pm(T), \pm$				108,111
$C_7H_{18}N_2OS_2$	1901	$HOCH(CH_2NHCH_2CH_2SH)_2$	2	150 $+, 0$		400 $\pm$		211
$C_7H_{18}N_2OS$	3094	$HOCH_2CHOHCH_2NHCH_2CH_2NHCH_2CH_2SH$	2	700 0				108,111
$C_7H_{18}N_2OS_2$	35986	$H_2N(CH_2)_3NHC(CH_3)_2CH_2SSO_3H$	1	1000 0				57

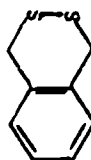
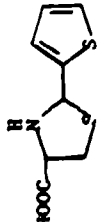
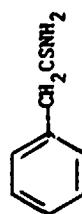
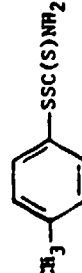
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{18}N_2O_5S_2$	3158	$HOCH_2(CH_2)_2NHCH_2CH_2NHCH_2CH_2SSO_3H$	39	800	0(T), 0			111
$C_7H_{18}N_2O_4S_2$	3845	$CH_3CH(OH)CH_2NHCH_2CH_2NHCH_2CH_2SSO_3H$	39	600	0(T), 0			111
$C_7H_{18}N_2O_5S_2$	4282	$HOCH_2CH(OH)CH_2NHCH_2CH_2NHCH_2CH_2SSO_3H$	39	400	0			111
$C_7H_{18}N_2O_6S_4$	2935	$HO_3SSCH_2CH_2NH(CH_2)_3NHCH_2CH_2SSO_3H$		200	0			205
$C_7H_{18}N_2S$	915	$(CH_3)_2N(CH_2)_3NHCH_2CH_2SH$	2	200	±, 0	200	0	102
$C_7H_{18}N_2S$	1040	$CH_3CH_2NHCH_2CH_2NHCH_2CH_2CH_2SH$	1	225	0			231
$C_7H_{18}N_2S$	1729	$H_2N(CH_2)_5NHCH_2CH_2SH$	2	100	±, ±			207
$C_7H_{18}N_2S$	6365	$CH_3CH_2NH(CH_2)_3NHCH_2CH_2SH$	2	75	0			169
$C_7H_{18}N_2S$	35983	$H_2N(CH_2)_3NHC(CH_3)_2CH_2SH$	1	56	0			57

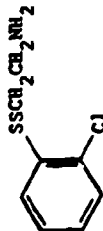
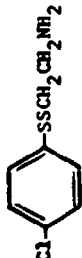
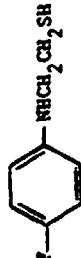
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₇ H ₁₆ N ₂ S	151326	CH ₃ NH(C ⁺ T ₂) ₃ NHC ⁺ H ₂ CH ₂ CH ₂ SH	2	125	+,+,+,+,+	500	+,+,+,+	188
C ₇ H ₁₈ N ₂ S ₂	2665	CH ₂ (CH ₂ NHCH ₂ CH ₂ SH) ₂	2	150	+,+	250	+	199
C ₇ H ₁₈ N ₂ S ₂	2802	HSCCH ₂ C ⁺ T ₂ NHCH ₂ CH ₂ (CH ₃)NHCH ₂ CH ₂ SH	2	60	+,+			199
C ₇ H ₁₉ NOSS1	76740	(CH ₃) ₃ SiOCH ₂ CH ₂ NHCH ₂ CH ₂ SH		500	+,+,0	800	+	244
C ₇ H ₁₉ NO ₃ S ₂ S1	42757	(CH ₃) ₃ SiC ⁺ T ₂ CH ₂ NHCH ₂ CH ₂ SSO ₃ H		50	0			234
C ₇ H ₁₉ NSS1	55737	(CH ₃) ₃ SiCH ₂ CH ₂ NHCH ₂ CH ₂ SH	1	15	0			234
C ₇ H ₁₉ N ₂ O ₃ PS	2823	H ₂ N(CH ₂) ₅ NHCH ₂ CH ₂ SPO ₃ H ₂	42	600	+(T),+,+,0	500	+,+	57,154
C ₇ H ₁₉ N ₂ O ₃ PS	5144	CH ₃ CH ₂ NH(CH ₂) ₃ NHCH ₂ CH ₂ SPO ₃ H ₂	45	500	+,+,0	500	+	154,169
C ₇ H ₁₉ N ₂ O ₃ PS	25877	H ₂ N(CH ₂) ₃ NHC(CH ₃) ₂ CH ₂ SPO ₃ H ₂	45	600	+,+,+			57,154
C ₇ H ₁₉ N ₂ O ₃ .S	62945	CH ₃ NH(CH ₂) ₄ NHCH ₂ CH ₂ SPO ₃ H ₂	46	180	+(T),0	800	0	154,169
C ₇ H ₁₉ N ₂ O ₃ PS	80855	H ₂ N(CH ₂) ₄ NHCH ₂ CH ₂ CH ₂ SPO ₃ H ₂	44	100	0			57,154

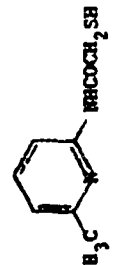
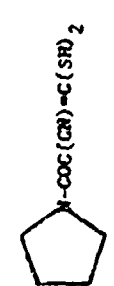
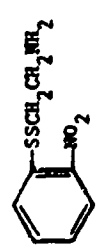
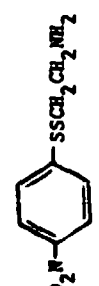
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{19}N_2O_3PS$	126158	$H_2NCH_2C(CH_3)_2CH_2NHCH_2CH_2SPO_3H_2$	42	300	+, +, 0	1000	±(T), ±	60, 154
$C_7H_{19}N_2O_3PS$	151327	$CH_3NH(CH_2)_3NHCH_2CH_2CH_2SPO_3H_2$	45	300	+, +, +, ±	600	+, +, 0	154, 188
$C_7H_{19}N_2O_3PS$	170427	$(CH_3)_2N(CH_2)_3NHCH_2CH_2SPO_3H_2$	52, 45	100	±, 0	500	0(T), 0	154, 206
$C_7H_{17}N_2O_3PS$	182141	$CH_3NHCH_2CH(CH_3)CH_2NHCH_2CH_2SPO_3H_2$	42	250	+, +, 0	500	0	122, 154
$C_7H_{19}N_2O_3PS$	183977	$H_2N(CH_2)_5CH(NH_2)CH_2SPO_3H_2$		200	+, +, +, 0	800	0(T), ±, 0	126
$C_7H_{19}N_2O_4PS$	190073	$HOCH_2CH_2NH(CH_2)_3NHCH_2CH_2SPO_3H_2$	45, 78	100	+, 0	300	0(T), 0	126
$C_7H_{19}N_2O_4PS$	149849	$H_2N(CH_2)_4NHCH_2CH(OH)CH_2SPO_3H_2$	42, 76	150	0	500	0	188
$C_7H_{19}N_3S_3$	42394	$(H_2NCH_2CH_2S)_3CH$	3	180	0			66
$C_7H_{19}N_4O_3PS$	183978	$H_2NC(=NH)NHCH_2CH(CH_3)CH_2NHCH_2CH_2SPO_3H_2$		80	+, +, +, 0	500	0(T), 0	126
$C_7H_{19}N_4O_3PS$	183979	$H_2NC(=NH)NHCH_2CH_2CH(CH_3)NHCH_2CH_2SPO_3H_2$	45	80	+, +, 0	300	±(T), 0	126

Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_7H_{19}N_4O_3PS$	190222	$H_2NC(=NH)NH(CH_2)_3NH(CH_2)_3SPO_3H_2$		90	+(T),+,+,±	250	0	126
$C_7H_{20}N_2O_6P_2S_2$	3694	$H_2O_3PSCH_2CH_2NH(CH_2)_3NHCH_2CH_2SPO_3H_2$	58	250	+,+,±,0	400	0	205
$C_7H_{20}N_2O_7P_2S_2$	179212	$CHOH(CH_2NHCH_2CH_2SPO_3H_2)_2$		250	+,±	500	0(T),0	168
$C_8H_5NO_2S_2$	186689			50	0(T),0			70
$C_8H_6Cl_2OS_2$	123930			180	0			350
$C_8H_6O_4S_2$	136916			100	0			245

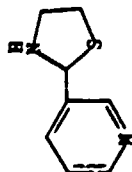
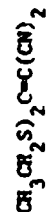
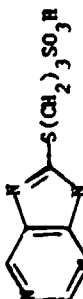
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_7Cl_3O_3S_2$	3029			50	0(T), 0			101
$C_8H_8BrNO_4S_2$	6314		57	200	0			99
$C_8H_8N_2O_6S_2$	6309		57	150	0			99
$C_8H_8N_2O_6S_2$	6311		57	200	0			99
$C_8H_8N_2S$	181			100	0(T), 0(T)			26

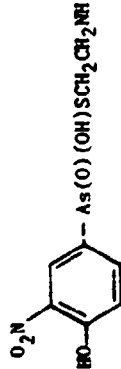
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_8S_2$	121334			300	0			11
C_8H_9NOS	159			75	0			2
$C_8H_9NO_2S_2$	154621		1	200	0	600	± 0	3
$C_8H_9NO_4S_2$	6307		57	100	0			99
C_8H_9NS	41			300	0(T), 0			11
$C_8H_9NS_3$	3037			400	0(T), 0			138, 153

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_9NS_2$	92437	$CH_3(CH_2)_3NHC(SNH)(CH_3)CH_2CH_2SH$		150	0			59
$C_8H_{10}ClNS_2$	2702		1	50	0			246, 247
$C_8H_{10}ClNS_2$	2867		1	50	0			248
$C_8H_{10}FNS$	2423			200	0			12
$C_8H_{10}FN_3O_3S_2$	92434			80	0 (T), 0			187

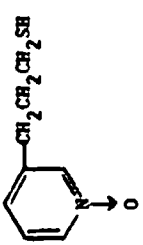
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{10}N_2OS$	1143		1	80	0			63
$C_8H_{10}N_2OS$	1832			75	0			160
$C_8H_{10}N_2OS_2$	176610		56	600	+0	600	+0	7
$C_8H_{10}N_2O_2S_2$	2752		1	100	0(T), 0			247
$C_8H_{10}N_2O_2S_2$	2943		1	35	0			248

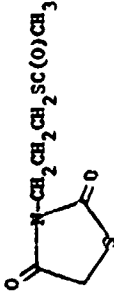
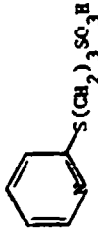
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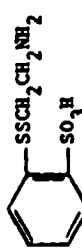
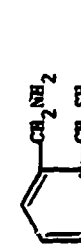
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_8N_2O_3S_2$	2186			40	0			37
$C_8H_{10}N_2S$	748			750	0			215
$C_8H_8N_2S$	75614		10	180	0			11
$C_8H_{10}N_2S_2$	5938			100	0(T), 0(T)			129
$C_8H_8N_2O_3S_2$	8363			1000	0			117
$C_8H_{10}N_4O_5S_2$	88309			80	+(T), 0			187

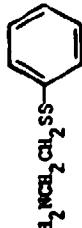
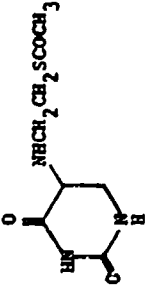
Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{10}N_4S$	1812			100	0			20
$C_8H_{10}O_8S_4$	102233		42, 58	600	0			11
$C_8H_{11}AsClNO_2S$	80411		42	15	0			145
$C_8H_{11}AsN_2O_4S$	81858		42	10	0(T), 0			145
$C_8H_{11}AsN_2O_5S$	88898		42	40	0			145

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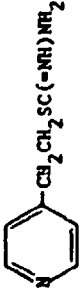
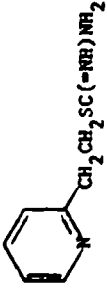
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{11}NOS$	998		1	150	0			128
$C_8H_{11}NOS$	1000			150	0			128
$C_8H_{11}NO_3S_2$	769			125	±.0			99

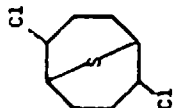
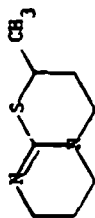
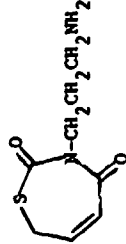
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{11}NO_3S_2$	1050			100	0			99
$C_8H_{11}NO_3S_2$	1173		42,57	700	0(T),0			128
$C_8H_{11}NO_3S_2$	2610			300	0			169
$C_8H_{11}NO_3S_2$	3552			400	0			242
$C_8H_{11}NO_3S_2$	5142			1000	0			117

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{11}NO_3S_3$	3030			600	+(T), ±			246, 247
$C_8H_{11}NS$	633		1, 41	75	0(T), 0			249, 250
$C_8H_{11}NS$	997		1	50	0			128
$C_8H_{11}NS$	999		1	100	0(T)			128
$C_8H_{11}NS$	1046		1	44	0			99

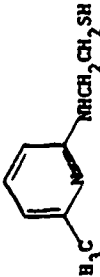
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{11}NS$	1091			300	0			251
$C_8H_{11}NS_2$	2710		1	50	0			248
$C_8H_{11}N_2O_3S$	1106			1000	0			252
$C_8H_{11}N_2O_3S_2$	2588			75	0(T), 0			189
$C_8H_{11}N_2O_3S_2$	27544			100	0(T), 0			189

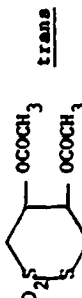
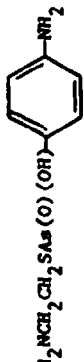
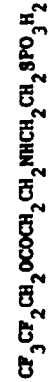
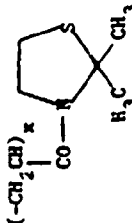
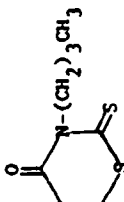
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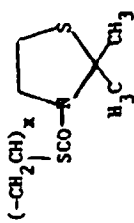
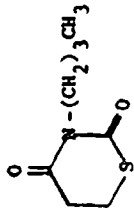
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{11}N_3O_3S_2$	29654			80	+(T), 0			189
$C_8H_{11}N_3O_3S_2$	92438			50	0			187
$C_8H_{11}N_3S$	208		32	100	0			214
$C_8H_{11}N_3S$	209		2	50	0			214
$C_8H_{11}N_3S$	67803		1	80	0			13

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{12}AsNO_2S$	70036	$H_2NCH_2CH_2SAs(O)(OH)-$ 	42	50	0			145
$C_8H_{12}Cl_2S$	152105			20	0			253
$C_8H_{12}FNO_2S_2$	5023	$CF_3CF_2CH_2OOCCH_2CH_2N(CH_2CH_2SSO_3H)$		1000	0			56,242
$C_8H_{12}N_2OS$	1577		1	300	0(T)			63
$C_8H_{12}N_2O_2S$	2323		6	275	0			63

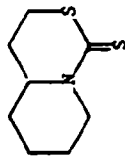
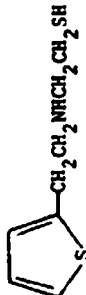
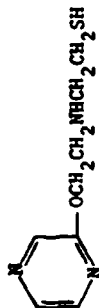
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{12}N_2O_2S_2$	1807			300	0			215
$C_8H_{12}N_2O_2S_3$	25127		57	20	+0			189
$C_8H_{12}N_2O_2S_2$	26904			50	+(T), 0			189
$C_8H_{12}N_2O_2S_3$	170433		57	250	+0	1000	0	206
$C_8H_{12}N_2S$	749			200	0(T), 0			215

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{12}N_2S$	1830			75	0			212
$C_8H_{12}N_4S$	142081		7	50	0(T), 0			188
$C_8H_{12}O_4S_2$	156790			400	0			85
$C_8H_{12}O_5S_2$	156791			50	0			85

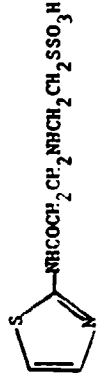
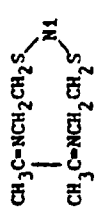
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{12}O_6S_2$	177581			30 +,0		900 0		'85
$C_8H_{13}AsN_2O_2S$	88897		42	8 0				145
$C_8H_{13}F_5NO_5PS$	4798			1500 +,0				56/243
$C_8H_{13}NOS$	2014			600 0				254
$C_8H_{13}NOS_2$	1717			600 0				64

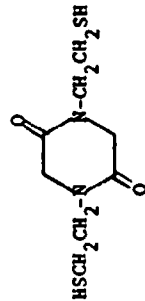
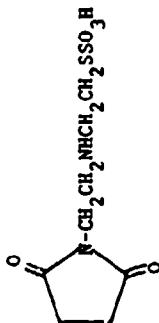
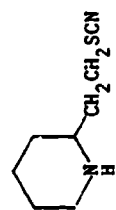
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{13}NO_5S_2$	2013			150 0				254
$C_8H_{13}NO_2S$	2092			600 0(T), 0				64
$C_8H_{13}NO_2S_2$	2359	$H_2C=CHCH_2NHCSSCH_2COOCH_2CH_3$		300 0				63
$C_8H_{13}NO_3S$	2360	$H_2C=CHCH_2NHC(O)SCH_2COOCH_2CH_3$		1000 0				63
$C_8H_{13}NO_5S$	176186	$CH_3CONHCH_2CH_2SCH(COOH)CH_2COOH$		500 0				255
$C_8H_{13}NO_5S_2$	5022	$HC\equiv CCH_2OCOCH_2CH_2NHCH_2CH_2SSO_3H$		300 4, 0				56, 242

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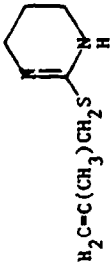
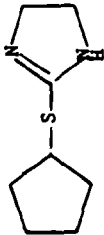
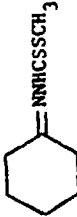
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{13}NS_2$	937			100	0			143
$C_8H_{13}NS_2$	2559	$CH_3N=C(SCH_2CH_2CH_2)_2$		100	0			14
$C_8H_{13}NS_2$	3292			50	$\pm$.0			195
$C_8H_{13}N_3OS$	98078		2	60	0			99
$C_8H_{13}N_3O_4S_2$	98076			200	0(T).0			99

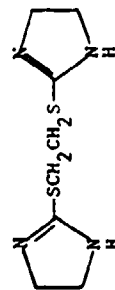
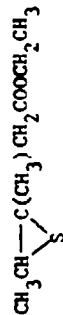
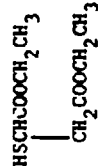
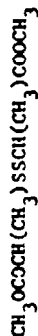
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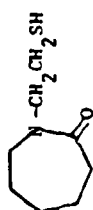
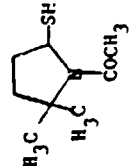
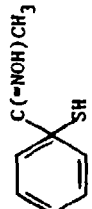
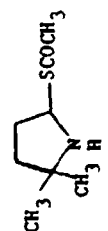
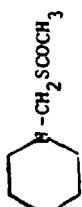
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{13}N_3O_4S_3$	9094			100 0				144
$C_8H_{14}Cd_2N_2O_4S_2$	3295	$(OCOCH_2NHCH_2CH_2S)_2Cd_2$		15 0(T), 0				76
$C_8H_{14}F_5NO_2S$	3120	$HOCH_2CH_2C(C_2F_5)(OH)CH_2NHCH_2CH_2SH$		200 0				77
$C_8H_{14}NO_5PS$	4794	$HC\equiv CCH_2OCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		400 0(T), 0				56, 243
$C_8H_{14}N_2NiS_2$	3076			50 0(T), 0				171
$C_8H_{14}N_4N_1O_4S_2$	2827	$(OCOCH_2NHCH_2CH_2S)_2N_4$	46	50 $\pm$, 0				76
$C_8H_{14}N_2OS$	571			50 0				11

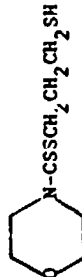
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{14}N_2O_5S_2$	2512	$CH_3CON=N-C(CH_3)_2CH_2SC(S)OCl_2CH_3$		200	0(T), 0			14
$C_8H_{14}N_2O_5S_2$	80858			150	+, 0			116
$C_8H_{14}N_2O_5S_2Zn_2$	3294	$(OCOCH_2NHCH_2CH_2S)_2Zn_2$		25	0(T), 0			76
$C_8H_{14}N_2O_5S$	150066	$CH_3CH_2OCONHN(COOC_2H_5)SC(O)CH_3$		40	0			1
$C_8H_{14}N_2O_5S_2$	76969			400	0			256
$C_8H_{14}N_2S$	1111		6	8	0			143

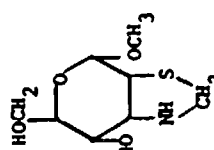
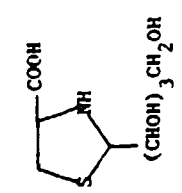
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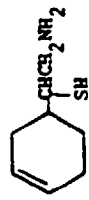
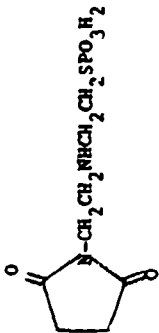
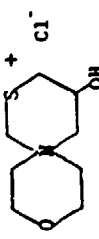
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{14}N_2S$	1158	 $H_2C=C(CH_3)CH_2S$	1	20	0			63
$C_8H_{14}N_2S$	2070			25	0			152
$C_8H_{14}N_2S_2$	2329			10	0			14
$C_8H_{14}N_2S_2$	2369	$(CH_3)_2C=NHC(S)SCH_2C(CH_3)=CH_2$		12	0			14
$C_8H_{14}N_4S_2$	401	$(H_2C=CHCH_2NHC(SNH-))_2$		40	0(T)			3

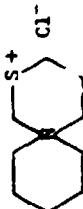
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{14}N_4S_2$	531		7	100	±.0			11
$C_8H_{14}O_2S$	1077			600	0			257
$C_8H_{14}O_4S$	1075			800	0			5
$C_8H_{14}O_4S_2$	104709			150	0			157

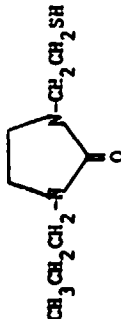
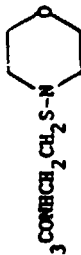
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I. P.		P. O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_8H_{15}NOS$	1443			150	0(T)			49
$C_8H_{15}NOS$	2200			59	0			232
$C_8H_{15}NOS$	2208			200	0			130
$C_8H_{15}NOS$	2566		1	15	0(T), 0			150
$C_8H_{15}NOS$	5805			320	0			232
$C_8H_{15}NOS_2$	183334	$H_2NC(CH_3)_2CHSC(S)CH_2COCH_3$	27	50	0	100	0	70

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₈ H ₁₅ NO ₃ S	684			250	0			259
C ₈ H ₁₅ NO ₂ S	1784	CH ₃ CH ₂ OC(O)CH=C(CH ₃)NHCH ₂ CH ₂ SH		250	0			12
C ₈ H ₁₅ NO ₂ S ₂	1716	CH ₃ (CH ₂) ₃ NHCSSCH ₂ CH ₂ COOH		400	0			64
C ₈ H ₁₅ NO ₂ S ₂	2609	(CH ₃) ₂ C=N-OCH ₂ CH ₂ SC(S)OCH ₂ CH ₃		200	0			16
C ₈ H ₁₅ NO ₂ S ₂	26332	CH ₃ CH ₂ N(CH ₂ SCOCH ₃) ₂		100	0			232
C ₈ H ₁₅ NO ₂ S ₃	2139	CH ₃ CH ₂ SC(O)SCH ₂ CH ₂ NHCOSCH ₂ CH ₃		400	0			146
C ₈ H ₁₅ NO ₃ S	1890	CH ₃ (CH ₂) ₃ NHCOSCH ₂ CH ₂ COOH		500	0			64
C ₈ H ₁₅ NO ₃ S	8189	CH ₃ COOCH ₂ CH ₂ NHCH ₂ CH ₂ SC(O)CH ₃	1	600	+0	1800	0	121,103,104
C ₈ H ₁₅ NO ₃ S ₂	4867a	H ₂ NCH ₂ CH ₂ SC(O)S(CH ₂) ₃ COOH	1	320	0			156
C ₈ H ₁₅ NO ₃ S ₂	84137	H ₂ NCH ₂ CH ₂ SC(O)SCH ₂ CH ₂ COOCH ₂ CH ₃	1	250	+0			156

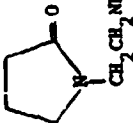
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{15}NO_3S_2$	162456	$CH_3CONHCH_2CH_2SSCH_2CH_2COOH$		250	+0			175
$C_8H_{15}NO_4S$	194	$CH_3OCOCH_2CH_2SCH_2CH_2CH(NH_2)COOH$		1500	0			217
$C_8H_{15}NO_4S$	812			316	0			227
$C_8H_{15}NO_4S$	2087	$CH_3CH_2OCOCH_2CH_2S(O)CH_2CH_3$		500	0			146
$C_8H_{15}NO_5S_2$	5021	$CH_2=CHCH_2OCOCH_2CH_2NHCH_2CH_2SSO_3H$		500	0(T), 0			56,242
$C_8H_{15}NO_6S$	978	 D-arabino		2000	0			220

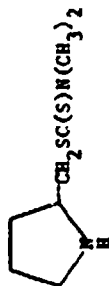
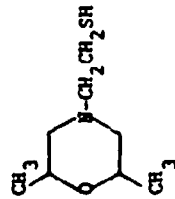
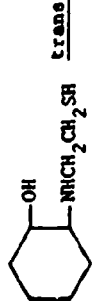
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{15}NO_7S_2$	3836	$CH_3OCOCH_2CH(COOCH_3)NHCH_2CH_2SSO_3H$	38	800 0				56,242
$C_8H_{15}NS$	382	$(CH_2=CHCH_2)_2NCH_2CH_2SH$		62.5 0				6
$C_8H_{15}NS$	2123		1	25 0				164
$C_8H_{15}P_2O_5PS$	76970		45	300 +.0				256
$C_8H_{16}ClNO_5$	3624			50 0				12
$C_8H_{16}ClNO_2S$	3615			100 0(T),0				12

Molecular Formula	WR Number	Structure	Salt Form	A-tirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{16}ClNS$	3623			25	0			12
$C_8H_{16}ClNS$	50481		1	50	0			92
$C_8H_{16}ClNS_2$	123087	 <u>trans</u>	1	50	0			246

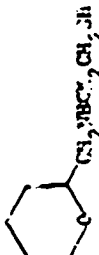
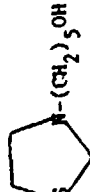
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{16}NO_4PS$	73853	$HC \equiv CC(OH)(CH_3)CH_2CH_2NHCH_2CH_2SPO_3H_2$	41	560	+,+,0	300	0	145,243
$C_8H_{16}NO_5PS$	6376	$CH_2=CHCH_2OCOCCH_2CH_2NHCH_2CH_2SPO_3H_2$		150	0			56,243
$C_8H_{16}N_2O_5S$	3098			150	0			132
$C_8H_{16}N_2O_5S$	2038	$CH_3(CH_2)_3NHCSNHCH_2CH_2COOH$		100	0			20
$C_8H_{16}N_2O_5S$	122158			20	0			260
$C_8H_{16}N_2O_5S_2$	246	$CH_3CONHCH_2CH_2SSCH_2CH_2NHCOCH_3$		350	0			201
$C_8H_{16}N_2O_5S_2$	1610	$HCOOHCH_2CH_2SSCH_2CH_2NHCOH$		200	0			27

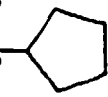
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{16}N_2O_2S_2$	1752	$CH_3CH(SH)CONHCH_2CH_2NHCOCH(SH)CH_3$		75 0				9
$C_8H_{16}N_2O_2S_2$	1970	$HSCCH_2CH_2CONHCH_2CH_2NHCOCH_2CH_2SH$		250 0(T)				9
$C_8H_{16}N_2O_2S_2$	2278	$CH_3CH(SH)CH_2NHCOCONHCH_2CH(SH)CH_3$		500 0				27
$C_8H_{16}N_2O_2S_3$	3699	$CH_3CONHCH_2CH_2SSSCH_2CH_2NHCOCH_3$		50 0				91
$C_8H_{16}N_2O_2S_4$	2372	$H_2NCH_2CH_2SC(O)SCH_2CH_2SC(O)SCH_2CH_2NH_2$		150 0				135
$C_8H_{16}N_2O_3S$	2097	$CH_3CH_2OCOCH_2CH_2SC(O)NHCH_2CH_2NH_2$		1050 0				63
$C_8H_{16}N_2O_2S_2$	3319			50 $\pm$ 0		720 0		190,299
$C_8H_{16}N_2O_2S_2$	158492			50 0		300 0(T)		148

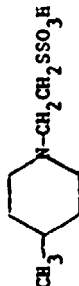
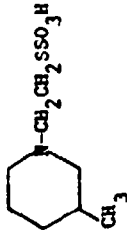
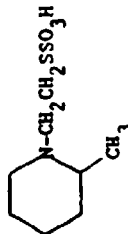
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{16}N_2O_3S_2$	166820			15	+0	50	0	98,299
$C_8H_{16}N_2O_3S_2$	800	$CH_3CONHCH_2CH_2SO_2SCH_2CH_2NHCOCH_3$		750	+0			201
$C_8H_{16}N_2O_3S_2$	1527			50	0			261
$C_8H_{16}N_2O_4S_2$	1611	$HCONH(CH_2)_3SSO_2(CH_2)_3NHCOH$		350	0			27
$C_8H_{16}N_2O_4S_2$	2999	$HOOCCH_2NHCH_2CH_2SSCH_2CH_2NHCH_2COOH$		1200	0			11
$C_8H_{16}N_2S$	2400	$NC(CH_2)_5NHCH_2CH_2SH$		50	0(T),0			12
$C_8H_{16}N_2S$	41262	$NCCH_2CH_2N(CH_3)CH_2C(CH_3)_2SH$		200	0			145

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{16}N_2S$	197511		1	20 $\pm$ 0		30 $\pm$ 0		120
$C_8H_{16}N_2S_2$	1128		1	33 0				143
$C_8H_{16}N_2O_4S_2$	1427	$[H_2NC(=NH)NHC(COOH)CH_2S-]_2$		1000 0				20
$C_8H_{16}O_2S_2$	157069	$(CH_3)_3CSSC(O)OCH(CH_3)_2$		150 0		300 0		19
$C_8H_{17}NOS$	830		1	250 0				102,233
$C_8H_{17}NOS$	956	 <u>trans</u>	1	100 0				103,104,231

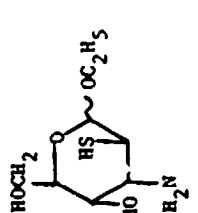
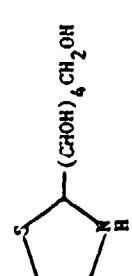
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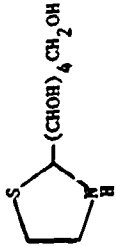
Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₈ H ₁₇ NOS	1121		1	150	0			102
C ₈ H ₁₇ NOS	39746		1	800	0(T), 0			144
C ₈ H ₁₇ NOS ₂	91484	HSC(CH ₃) ₂ CH ₂ CHCH ₂ CH ₂ SC(O)CH ₃		100	0			240
C ₈ H ₁₇ NO ₂ S	2874	CH ₃ CH ₂ COOCH ₂ CH(CH ₃)NHCH ₂ CH ₂ SH	27	1000	0			159
C ₈ H ₁₇ NO ₂ S	3432	CH ₃ CH ₂ OCH ₂ CH ₂ N(COCH ₃)CH ₂ CH ₂ SH		250	C			195
C ₈ H ₁₇ NO ₂ S	108543	CH ₃ OCOCH ₂ CH ₂ NHCH ₂ C(CH ₃) ₂ SH	27	450	0			54
C ₈ H ₁₇ NO ₂ S	125047	CH ₃ OCOCH ₂ CH ₂ NHC(CH ₃) ₂ CH ₂ SH		1000	±(T), 0			1
C ₈ H ₁₇ NO ₂ S	157066	(CH ₃ CH ₂) ₂ NC(O)S-OCH(CH ₃) ₂		15	0	100	0	19

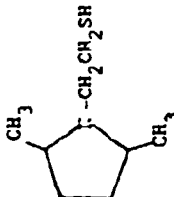
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{17}NO_2S$	157099	$(CH_3CH_2)_2NSC(O)OCH(CH_3)_2$		150 0		300 0		17
$C_8H_{17}NO_2S_2$	157097	$CH_3(CH_2)_3NHCH_2CH_2SSC(O)OCH_3$	1	35 0(T), 0		200 0		19
$C_8H_{17}NO_2S_2$	169417	$(CH_3CH_2)_2NSSC(O)OCH(CH_3)_2$		100 0		500 0		71
$C_8H_{17}NO_2S_2$	181194	$H_2NCH_2CH_2SSCH_2CH_2COOCH(CH_3)_2$	27	75 $\pm$ (T), 0		225 0		70
$C_8H_{17}NO_3S$	3557	$CH_3CH_2O-N-(CH_2)_3SH$ $COOCH_2CH_3$		500 0				106
$C_8H_{17}NO_3S_2$	892			100 0				226
$C_8H_{17}NO_3S_2$	1098	$H_2NCH_2CHCH_2SSO_3H$ 		75 $\pm$				162

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{17}NO_3S_2$	1734			100 0				11
$C_8H_{17}NO_3S_2$	128712			50 0				11
$C_8H_{17}NO_3S_2$	177471			65 $\pm$ 0				7
$C_8H_{17}NO_3S_2$	177472			100 0, $\pm$		300 0 (T), $\pm$		7
$C_8H_{17}NO_3S_2$	177473			50 0		200 0 (T), 0		7

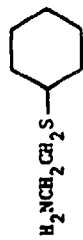
213

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{17}NO_3S_3$	76843	$CH_3CONHCH_2CH_2SS(CH_2)_4SO_3H$ 	57	370	+,+,+,+,+,0	600	+	197
$C_8H_{17}NO_4S$	667		1	75	0			218
$C_8H_{17}NO_4S_2$	3682	$CH_3COCH_2C(CH_3)_2NHCH_2CH_2SSO_3H$		100	0			56,242
$C_8H_{17}NO_4S_3$	76844	$CH_3CONH(CH_2)_2SS(CH_2)_4SO_3H$		800	+,0			197
$C_8H_{17}NO_5S$	187	 β -Glucoside		2000	0			262

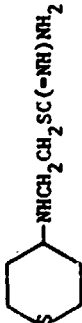
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{17}NO_5S$	537	 D-manno		1000	0			262
$C_8H_{17}NO_5S_2$	3554	$CH_3CH_2OC(O)CH_2CH(CH_3)NHCH_2CH_2SSO_3H$		800	0			56,242
$C_8H_{17}NO_5S_2$	3853	$HOOC(CH_2)_5NHCH_2CH_2SSO_3H$		2000	0			147
$C_8H_{17}NO_5S_3$	87332	$CH_3CONH(CH_2)_2SSO_2(CH_2)_4SO_3H$	57	700	0			197
$C_8H_{17}NO_7S_2$	2998	$(HOCH_2)_2C(OH)CH_2N(COCH_3)CH_2CH_2SSO_3H$	57	1800	0			111
$C_8H_{17}NS$	227			60	0			12
$C_8H_{17}NS$	734		1	7	0			185

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{17}NS$	779		1	50 0				185
$C_8H_{17}NS$	883		1	20 0				102,233
$C_8H_{17}NS$	2002		1	25 0				233
$C_8H_{17}NS$	2088		1	40 0				115

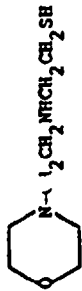
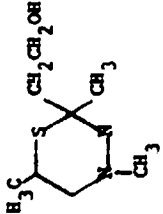
216

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{17}NS$	2207		1	100	0(T), 0(T)			263
$C_8H_{17}NS$	197512		1	40	0	200	0	120
$C_8H_{17}N_3OS$	658	$(CH_3)_3CNHCOCH_2CH_2SC(=NH)NH_2$	1	100	0			75
$C_8H_{17}N_3O_2S$	6367	$CH_3NHCOCONH(CH_2)_3NHCH_2CH_2SH$	1	300	0			147
$C_8H_{17}N_3O_2S$	9719	$H_2NCOCONH(CH_2)_4NHCH_2CH_2SH$	1	200	0(T), 0			264
$C_8H_{17}N_3O_3S$	3556	$CH_3CH_2OCCN(CH_3)-O(CH_2)_3SC(=NH)NH_2$	6	200	0			106
$C_8H_{17}N_3O_3S$	3686	$CH_3CH_2OCON(OCH_2CH_3)CH_2CH_2SC(=NH)NH_2$	6	100	0			106

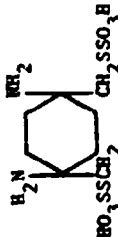
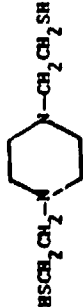
217

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₈ H ₁₇ N ₃ O ₅ S ₂	33767	CH ₃ NHCOCONH(CH ₂) ₃ NHCH ₂ CH ₂ SSO ₃ H		1000	0			325
C ₈ H ₁₇ N ₃ S	796		7	25	0			143
C ₈ H ₁₇ N ₃ S ₂	114389		7	20	0			62
C ₈ H ₁₇ N ₃ S ₃	2193	CH ₃ CH ₂ NHCSNHCH ₂ CH ₂ SCSNHCH ₂ CH ₃		1780	0(T)			139
C ₈ H ₁₈ INOS	2541	[(CH ₃) ₃ NHCH ₂ CH(CH ₃)SCOCH ₃] ⁺ I ⁻		2	0			27
C ₈ H ₁₈ NO ₂ S	2385	(CH ₃) ₂ CHOCH ₂ CH(OH)CH ₂ NHCH ₂ CH ₂ SH	1	100	0			211,103,104
C ₈ H ₁₈ NO ₄ PS	4479	CH ₃ COCH ₂ C(CH ₃) ₂ NHCH ₂ CH ₂ SPO ₃ H ₂		5	0			56,243
C ₈ H ₁₈ NO ₅ PS	125051	CH ₃ COOCH ₂ CH ₂ NHC(CH ₃) ₂ CH ₂ SPO ₃ H ₂		200	0	500	0	1,243

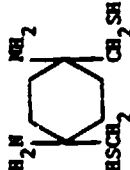
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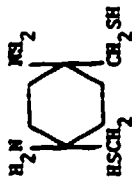
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		F.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{18}N_2OS$	1617		2	200	0(T), 0(T)			102, 108
$C_8H_{18}N_2OS$	2643	$(CH_3)_2CHCH_2CH(NH_2)COSCH_2CH_2NH_2$	2	400	+0			155
$C_8H_{18}N_2OS$	88301			400	0			59
$C_8H_{18}N_2OS$	105132	$CH_3CO_2HCH_2CH_2SN(C_2H_5)_2$		200	0(T), 0			260
$C_8H_{18}N_2OS$	203925	$(CH_3)_3CNHCSNHCH(CH_3)CH_2OH$		200	+0	600	4, ±	11
$C_8H_{18}N_2O_2S$	172729	$HOOCCH(NH_2)(CH_2)_4NHCH_2CH_2SH$	2	180	0	1000	±0	230

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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{18}N_2O_4S_2$	3025	$(CH_3)_2CHNHCOCH_2CH_2NHCH_2CH_2SSO_3H$		250 0				159
$C_8H_{18}N_2O_4S_2$	3841	$(C_2H_5)_2NCOCH_2NHCH_2CH_2SSO_3H$		320 0				165,242
$C_8H_{18}N_2O_4S_2$	145727	$HO(CH_2)_6NHC(=NH)CH_2SSO_3H$		80 0		600 0		98
$C_8H_{18}N_2O_4S_2$	176611			100 0(T), 0(T), 0		200 T		7
$C_8H_{18}N_2O_6S_4$	9717			300 0				109
$C_8H_{18}N_2S_2$	248			60 0				191

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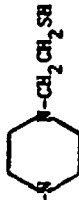
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{18}N_2S_2$	33770		15	75	S			109
$C_8H_{18}N_2S_2$	2383	$HSCH_2CH_2NHCH_2CH=CHCH_2NHCH_2CH_2SH$ <u>trans</u>	2	50	D			211
$C_8H_{18}N_4O_6S_4$	88310	$HO_3SSCH_2C(=NH)NH(CH_2)_4NHC(=NH)CH_2SSO_3H$	44	10	D(T), 0			59
$C_8H_{18}N_4S_4$	90241	$H_2NCSN(CH_3)CH_2CH_2SSCH_2CH_2N(CH_3)CSNH_2$		200	D			42
$C_8H_{18}N_4S_4$	98120	$H_2NC(SCH_3)=NCH_2CH_2SSCH_2CH_2N=C(SCH_3)NH_2$		56	D			42
$C_8H_{18}OS_3$	3139	$(CH_3)_3CS-S(O)SC(CH_3)_3$		100	D			101
$C_8H_{18}O_2S$	2842	$CH_3(CH_2)_3CH(C_2H_5)CH_2SO_2H$	57	1200	D(T), 0			101
$C_8H_{18}O_4S_5$	168643	$HO_2S(CH_2)_4-SSSS-(CH_2)_4SO_2H$	44, 58	75	+, +, +, ±	150	+, +	258
$C_8H_{19}NOS$	878	$(CH_3)_2CHO(CH_2)_3NHCH_2CH_2SH$	1	50	D			102

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{18}N_2S_2$	33770		15	75	S			109
$C_8H_{19}N_2S_2$	2383	$HSCH_2CH_2NHCH_2CH=CHCH_2NHCH_2CH_2SH$ <u>trans</u>	2	50	D			211
$C_8H_{18}N_4O_6S_4$	88310	$HO_3SSCH_2C(=NH)NH(CH_2)_4NHC(=NH)CH_2SSO_3H$	44	10	D(T), 0			59
$C_8H_{18}N_4S_4$	90241	$H_2MCSN(CH_3)CH_2CH_2SSCH_2CH_2N(CH_3)CSNH_2$		200	D			42
$C_8H_{18}N_4S_4$	98120	$H_2MC(SCH_3)_2=NHCH_2CH_2SSCH_2CH_2N=C(SCH_3)NH_2$		56	D			42
$C_8H_{18}OS_3$	3139	$(CH_3)_3CS-S(O)SC(CH_3)_3$		100	D			101
$C_8H_{18}O_2S$	2842	$CH_3(CH_2)_3CH(C_2H_5)CH_2SO_2H$	57	1200	D(T), 0			101
$C_8H_{18}O_4S_5$	168643	$HO_2S(CH_2)_4-SSS-(CH_2)_4SO_2H$	44, 58	75	+, +, +, ±	150	+, +	258
$C_8H_{19}NOS$	878	$(CH_3)_2CHO(CH_2)_3NHCH_2CH_2SH$	1	50	D			102

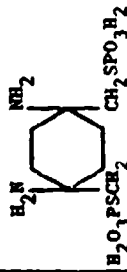
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{19}NO_3S_2$	960	$CH_3(CH_2)_4CH(CH_2NH_2)CH_2SSO_3H$		75 0				162
$C_8H_{19}NO_3S_2$	1471	$CH_3CH_2CH_2CH(CH_3)CH(CH_2NH_2)CH_2SSO_3H$		50 0				162
$C_8H_{19}NO_3S_2$	2137	$CH_3(CH_2)_3NHCH_2CH_2SSO_3H$		75 0(T).0				161,239,181
$C_8H_{19}NO_3S_2$	2856	$(CH_3)_2CHCH_2CH(CH_3)NHCH_2CH_2SSO_3H$		50 0				226
$C_8H_{19}NO_3S_2$	137263	$H_2N(CH_2)_8SSO_3H$		300 0				11
$C_8H_{19}NO_4S_2$	152918	$CH_3(CH_2)_4NHCH_2CH(OH)CH_2SSO_3H$		90 0		400 0		58
$C_8H_{19}NO_5S$	2939	$HOCH_2CH(OH)CH(CH_2OH)NHCH(CH_2OH)_2CH_2SH$	2.77	1500 0(T).0				107
$C_8H_{19}NO_5S_3$	6165	$(CH_3)_3CSO_2CH_2CH_2NHCH_2CH_2SSO_3H$		250 0				183
$C_8H_{19}NS$	17	$[(CH_3)_2CH]_2NCH_2CH_2SH$	1	50 0				11
$C_8H_{19}NS$	232	$(CH_3CH_2CH_2)_2NCH_2CH_2SH$		75 0				12
$C_8H_{19}NS$	234	$CH_3(CH_2)_3NHCH_2CH_2SH$		10 0				12
$C_8H_{19}NS$	781	$CH_3(CH_2)_5CH(NH_2)CH_2SH$	1	25 0				47

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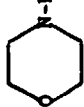
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{19}NS$	847	$CH_3(CH_2)_5CH(SH)CH_2NH_2$	1	50 0				47,164
$C_8H_{19}NS$	1462	$(CH_3)_2NCH(CH_3)CH_2C(CH_3)_2SH$	1	25 0				114
$C_8H_{19}NS$	2131	$CH_3(CH_2)_3CH(CH_3)N(CH_2CH_2)_2SH$	1	25 0				211
$C_8H_{19}NS$	2637	$(CH_3)_2CHCH_2CH(CH_3)N(CH_2CH_2)_2SH$	1	60 0				124
$C_8H_{19}NS_2$	2722	$CH_3(CH_2)_5SSCH_2CH_2NH_2$	1	40 0				202
$C_8H_{19}NS_3$	199753	$(CH_3)_3CN(CH_2CH_2)_2SC(S)SCH_2CH_3$	27	80 0		300 0(T), 0		120
$C_8H_{19}N_2O_3PS$	176256		44 52	70 ++		500 ++		61
$C_8H_{19}N_2O_5PS$	9054	$CH_3OOCCH_2CH_2NHCH_2CH_2NHCH_2CH_2SPO_3H_2$		1000 0(T), 0				165,243
$C_8H_{19}N_2O_5PS$	190219	$CH_3OOCCH_2NH(CH_2)_3N(CH_2CH_2)_2SPO_3H_2$	42	300 ++		1000 0		126

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{19}N_3O_5S_2$	25898	$H_2NN=C(CH_3)CH_2C(CH_3)_2NHCH_2CH_2SSO_3H$		10				165,242
$C_8H_{19}N_3S$	700		3	40	0			191
$C_8H_{20}NO_2PS_2$	2197	$H_2NCH_2CH_2SP(S) [OCH(CH_3)_2]_2$		100	0			235
$C_8H_{20}NO_2PS_2$	9059	$CH_3CH_2NHCH_2CH_2SP(S) (OC_2H_5)_2$	21	2.5	0			241
$C_8H_{20}NO_3PS$	108540	$(CH_3)_3CNHCH_2CH_2SP(O) (OCH_3)_2$	27	2	0			54
$C_8H_{20}NO_5PS$	27077	$(CH_3)_2CHCH_2CH_2NHCH_2CH_2SPO_3H_2$		100	+0			121
$C_8H_{20}NO_5PS$	27736	$CH_3CH_2CH_2CH_2CH_2NHCH_2CH_2SPO_3H_2$		150	+0			121
$C_8H_{20}NO_5PS$	59417	$(CH_3)_2CHCH_2CH_2NHCH_2CH_2SPO_3H_2$		320	+			313
$C_8H_{20}NO_6PS_2$	41265	$(C_2H_5O)_2P(O)CH_2CH_2NHCH_2CH_2SSO_3H$		560	+(T), 0			145

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{20}N_2MIS_2$	2348	$(CH_3)_2NCH_2CH_2SHSCH_2CH_2N(CH_3)_2$		5 0				76
$C_8H_{20}N_2PdS_2$	2349	$(CH_3)_2NCH_2CH_2SPdSCH_2CH_2N(CH_3)_2$		20 0				76
$C_8H_{20}N_2OS$	2414	$CH_3CH_2CH(CH_2OH)NCH_2CH_2NCH_2CH_2SH$	2	250 0(T).0				108,211
$C_8H_{20}N_2OS$	2477	$CH_3CH_2OCH_2CH_2NCH_2CH_2NCH_2CH_2SH$	2	20 0				108,211
$C_8H_{20}N_2O_2S$	3066	$H(OCH_2CH_2)_2NCH_2CH_2NCH_2CH_2SH$	2	600 (T).0				102,108
$C_8H_{20}N_2O_2S_2$	342	$MESOHSCH_2CH_2NCH_2CH_2OCH_2OCH_2NCH_2CH_2SH$	2	200 +				194
$C_8H_{20}N_2O_2S_2$	1967	$(CH_3)_2NCH_2CH_2SSO_2CH_2CH_2N(CH_3)_2$	2	350 0				203
$C_8H_{20}N_2O_2S_2$	2494	$DL HSCH_2CH_2NCH_2CH_2OCH_2OCH_2NCH_2CH_2SH$	2	50 0				267
$C_8H_{20}N_2O_2S_2$	3123	$HOCH_2CH_2NCH_2CH_2SSCH_2CH_2NCH_2CH_2OH$	2	400 +.0		1600 0		111
$C_8H_{20}N_2O_2S_3$	3351	$HSCH_2CH_2NCH_2CH_2SO_2CH_2CH_2NCH_2CH_2SH$	2	150 0				268
$C_8H_{20}N_2O_3S$	2416	$(HOCH_2)_3CNCH_2CH_2NCH_2CH_2SH$	1	90 0				108,211

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{20}N_2O_5S_2$	2862	$H_2N(CH_2)_6NHCH_2CH_2SSO_3H$	6	200	0			57
$C_8H_{20}N_2O_4S_2$	1483	$HOCH_2CH_2NHCH_2CH_2SSO_2CH_2CH_2NHCH_2CH_2OH$	2	1000	0			207
$C_8H_{20}N_2O_4S_4$	2094	$H_2NCH_2CH_2SSO_2(CH_2)_4SO_2SCH_2CH_2NH_2$	7	500	+(T), ±			135
$C_9H_{20}N_2O_6P_2S_2$	28449			100	0			109
$C_8H_{20}N_2O_5S_4$	2934	$HO_3SSCH_2CH_2NH(CH_2)_4NHCH_2CH_2SSO_3H$		100	0			205
$C_8H_{20}N_2O_8S_4$	2517	$MESO HO_3SSCH_2CH_2NHCH_2CHOHCHOCH_2NHCH_2CH_2SSO_3H$		200	0			267
$C_8H_{20}N_2O_5S_4$	2621	$DL HO_3SSCH_2CH_2NHCH_2CHOHCHOCH_2NHCH_2CH_2SSO_3H$		300	0(T), 0			267
$C_8H_{20}N_2O_8S_5$	3353	$SO_2(CH_2CH_2NHCH_2CH_2SSO_3H)_2$		400	0			268

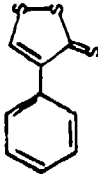
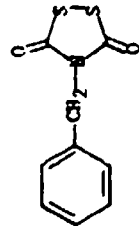
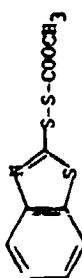
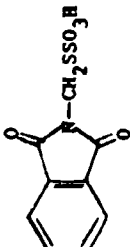
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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₈ H ₂₀ N ₂ S	778	CH ₃ (CH ₂) ₃ NHCH ₂ CH ₂ NHCH ₂ CH ₂ SH	2	25 0			231	
C ₈ H ₂₀ N ₂ S	857	(C ₂ H ₅) ₂ NCH ₂ CH ₂ NHCH ₂ CH ₂ SH	2	35 0			102	
C ₈ H ₂₀ N ₂ S	1562	H ₂ N(CH ₂) ₆ NHCH ₂ CH ₂ SH	2	125 +			102, 207	
C ₈ H ₂₀ N ₂ S	156789	CH ₃ NH(CH ₂) ₅ NHCH ₂ CH ₂ SH	2	50 0		200	188	
C ₈ H ₂₀ N ₂ S ₂	2209	HSCH ₂ CH ₂ NH(CH ₂) ₄ NHCH ₂ CH ₂ SH	2	125 +, ±			211	
C ₈ H ₂₀ N ₂ S ₂	2847	HSCH ₂ CH ₂ NHCH(CH ₃)CH(CH ₃)NHCH ₂ CH ₂ SH	2	60 0			199	
C ₈ H ₂₀ N ₂ S ₂ Zn	2825	[(CH ₃) ₂ NCH ₂ CH ₂ S-] ₂ Zn		5 0			76	
C ₈ H ₂₀ N ₂ S ₄	2184	H ₂ NCH ₂ CH ₂ SS-(CH ₂) ₄ -SSCH ₂ CH ₂ NH ₂	2	300	+(T), 0		208	
C ₈ H ₂₀ N ₃ OPS ₃	1972			75 0			186	

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{20}N_3O_3PS$	25904	$H_2NN=C(CH_3)CH_2C(CH_3)_2NHCH_2CH_2SPO_3H_2$		25 0				165,243
$C_8H_{20}N_6O_2S_2$	2801	$H_2NC(=NH)NHCH_2CH(CH_3)SO_2SCH(CH_3)CH_2NHC(=NH)NH_2$	28	50 0				27
$C_8H_{20}N_6S_2$	2190	$H_2NC(=NH)NHCH_2CH(CH_3)SSCH(CH_3)CH_2NHC(=NH)NH_2$	28	30 0				27
$C_8H_{20}N_6S_2$	2227	$H_2NC(=NH)NH(CH_2)_3SS(CH_2)_3NHC(=NH)NH_2$	28	50 0				27
$C_8H_{20}N_{10}S_2$	1806	$[H_2NC(=NH)NHC(=NH)NHCH_2CH_2S-]_2$	7	75 0				26
$C_8H_{21}NOSSl$	101822	$(CH_3)_3SiO(CH_2)_3NHCH_2CH_2SH$		300 $\pm$ 0				244
$C_8H_{21}NO_5S_2Sl$	51520	$(CH_3)_3Si(CH_2)_3NHCH_2CH_2SSO_3H$		80 0(T)				234
$C_8H_{21}NS_2Sl$	76741	$(CH_3)_3SiCH_2SCH_2CH_2NHCH_2CH_2SH$		90 $\pm$ (T), 0				244
$C_8H_{21}N_2O_2PS_2$	2100	$(C_2H_5O)_2P(S)NHCH_2CH_2SCH_2CH_2NH_2$		120 0				235
$C_8H_{21}N_2O_3PS$	2824	$H_2N(CH_2)_6NHCH_2CH_2SPO_3H_2$	44	300 $\pm$, $\pm$ 0		700 $\pm$		57,154
$C_8H_{21}N_2O_3PS$	114392	$CH_3CH_2NH(CH_2)_4NHCH_2CH_2SPO_3H_2$	44	45 0				154,169

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_8H_{21}N_2O_3PS$	149023	$H_2N(CH_2)_5NH(CH_2)_3SPO_3H_2$	42	60 0		300 0(T)		154,188
$C_8H_{21}N_2O_3PS$	149846	$CH_3NH(CH_2)_5NHCH_2CH_2SPO_3H_2$	44	200 + (T) +, 0		300 +		154,188
$C_8H_{21}N_2O_3PS$	170432	$(C_2H_5)_2NCH_2CH_2NHCH_2CH_2SPO_3H_2$	42,52	80 0(T), 0		100 0		154,206
$C_8H_{21}N_2O_3PS$	173151	$(CH_3)_3N^+(CH_2)_3NHCH_2CH_2SPO_3H^-$	42	15 0(T), 0		200 0(T), 0(T)		61
$C_8H_{21}N_2O_3PS$	180112	$H_2NCH_2C(CH_3)_2CH_2NH(CH_2)_3SPO_3H_2$	46	400 + (T), 0		500 0(T), 0		61,154
$C_8H_{21}N_2O_3PS$	186691	$(CH_3)_2N(CH_2)_4NHCH_2CH_2SPO_3H_2$	45,52	100 +, ±		300 ±, 0		126,184
$C_8H_{21}N_2O_3PS_2$	88894	$CH_3S(CH_2)_3NHCH_2CH_2NHCH_2CH_2SPO_3H_2$	42	80 0(T), 0				54,243
$C_8H_{21}N_2O_4PS$	159947	$H_2N(CH_2)_5NHCH_2CH(OH)CH_2SPO_3H_2$	42,77	120 +		500 0		206
$C_8H_{21}N_2PS_3$	2314	$CB_3(CH_2)_3P(S)(NHCH_2CH_2SH)_2$		100 0				127
$C_8H_{21}N_3S$	1821	$H_2N(CH_2)_3NH(CH_2)_3NHCH_2CH_2SH$	3	50 0				207
$C_8H_{21}N_4O_3PS$	199275	$H_2NC(=NH)NH(CH_2)_5NHCH_2CH_2SPO_3H_2$		40 +, 0		450 0		269

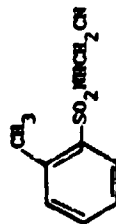
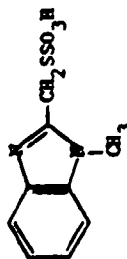
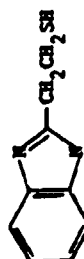
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{22}N_2O_6P_2S_2$	4431	$H_2O_3PSCl_2CH_2NH(CH_2)_4NHCH_2CH_2SPO_3H_2$	58	200	+, +, 0	400	+	205
$C_8H_{22}N_2O_6P_2S_2$	108511	$H_2O_3PS(CH_2)_3NH(CH_2)_2N(CH_2)_3SPO_3H_2$		200	0(T), 0			270
$C_8H_{22}N_2SS1$	76738	$(Cd_3)_3SiCH_2NHCH_2CH_2NHCH_2CH_2SH$	2	10	0			271
$C_8H_{22}N_2S_3$	1700	$(C_2H_5)_2NP(S)(NHCH_2CH_2SH)_2$		150	0			186
$C_8H_{23}NSS1_2$	51519	$(CH_3)_3C_1NHCH_2CH_2SS1(CH_3)_3$		300	0			19,244
$C_8H_{24}Br_2N_4S_4$	1169	$[(H_2NCH_2CH_2S^-)_2N1]_2N1Br_2$		25	0			76
$C_8H_{24}Cd_2Cl_4N_4S_4$	1280	$[(H_2NCH_2CH_2S^-)_2N1]_2(CdCl_2)_2$		1	0			76
$C_8H_{24}Cl_2CuN_4S_4$	1283	$[(H_2NCH_2CH_2S^-)_2N1]_2JCl$		40	+(T)			76
$C_8H_{24}Cl_2Co_3N_4S_4$	1282	$[(H_2NCH_2CH_2S^-)_2Co]_2CoCl_2$		7	0			76
$C_8H_{24}Cl_2CuN_4S_4$	1279	$[(H_2NCH_2CH_2S^-)_2N1]_2CuCl_2$		10	0			76
$C_8H_{24}Cl_2N_4S_4$	1168	$[(H_2NCH_2CH_2S^-)_2N1]_2N1Cl_2$		33	0			76

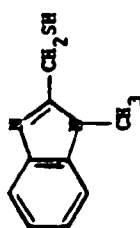
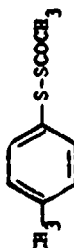
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_8H_{24}Cl_2N_4S_2$	1430	$[H_2NN(CH_3)_2CH_2CH_2SSCH_2CH_2N(CH_3)_2NH_2]^{++} 2Cl^-$		20 0				26
$C_9H_6S_3$	1055			150 0				272
$C_9H_7NO_2S_2$	186686			300 0(T), 0				70
$C_9H_7NO_2S_3$	186685			150 0(T), 0		400 0		120
$C_9H_7NO_2S_2$	25955		57	200 0				273

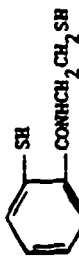
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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_8N_4O_3S_2$	732			360 0				8
$C_9H_8O_2S$	528			300 0				246
$C_9H_9NO_2S$	92485			800 0				274
$C_9H_9NS_2$	630			1000 0				160
$C_9H_{10}ClN_3S_2$	132723			100 0				6

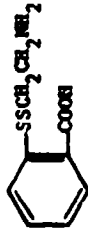
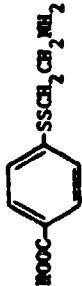
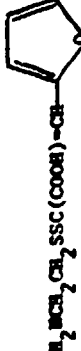
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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{10}N_2OS$	642			200.0				11
$C_9H_{10}N_2O_2S$	1236			105.0				3
$C_9H_{10}N_2O_3S_2$	76840			40.0 (T).0				140
$C_9H_{10}N_2S$	675			500.0				275

Molecular Formula	WR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{10}N_2S$	43525		1.42	80	0			13
$C_9H_{10}N_2S$	146075		17	2	0			1
$C_9H_{10}N_2S_2$	934			300	0			170
$C_9H_{10}OS_2$	123935			100	0			350
$C_9H_{10}O_2S_2$	145038			80	0			5
$C_9H_{11}NOS$	190		1	300	±.0			40, 81

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose mg/Kg	Rating	Dose mg/Kg	Rating	
$C_9H_{11}NOS$	29673			100 0				11
$C_9H_{11}NOS_2$	2418			200 0				276
$C_9H_{11}NOS_2$	150082		1	50 $\pm$ 0				210
$C_9H_{11}NOS_3$	157070		1	25 $\pm$ 0				19
$C_9H_{11}NO_2S$	169416			56 0		100 0		19

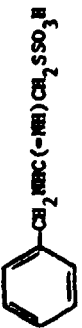
236

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{11}NO_2S_2$	1886			225	+(T), ±			276
$C_9H_{11}NO_2S_2$	2605			40	0			276
$C_9H_{11}NO_3S$	186688			300	0			70
$C_9H_{11}NO_3S_2$	3359		57	600	±, 0	2000	0(T), 0	11
$C_9H_{11}NO_3S_2$	186697		1	100	±, 0	600	0(T), ±, 0	70

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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{11}NO_4S_2$	3426		57	560	+,+			11
$C_9H_{11}NO_4S_2$	6312		57	92	0			212
$C_9H_{11}NS$	74326			150	+,±	600	±,0	277
$C_9H_{11}NS_2$	797		6	100	0			40
$C_9H_{11}NS_3$	3538			100	0			138,153
$C_9H_{12}N_2OS$	1902			500	0			193

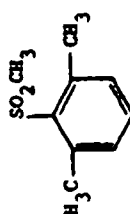
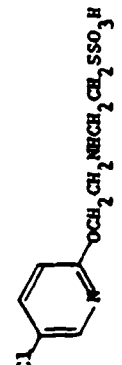
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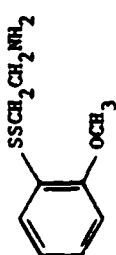
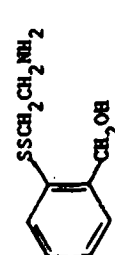
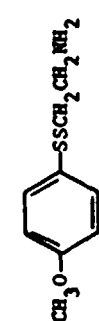
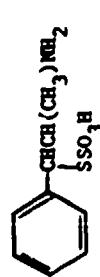
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{12}N_2O_3S$	93238			400	0(T), ±, 0			89
$C_9H_{12}N_2O_3S$	150078		27	75	0	300	0	19
$C_9H_{12}N_2O_3S$	183			100	0			278
$C_9H_{12}N_2O_3S_2$	1530			100	0(T), 0			96
$C_9H_{12}N_2O_3S_2$	1756			25	0(T), 0			10, 37
$C_9H_{12}N_2O_3S_2$	102270			400	0			11

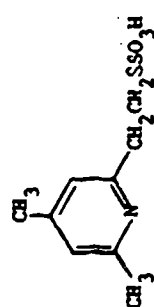
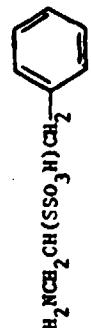
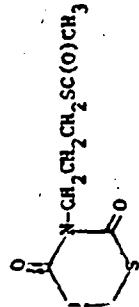
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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{12}N_2O_3S_3$	117403		57	320	+0			11
$C_9H_{12}N_2S$	60239		1	25	0	112	0(T), 0(T)	13
$C_9H_{12}N_2S_2$	1765			200	0			20
$C_9H_{12}N_2S_2$	181192		1	90	+0	250	0	70
$C_9H_{12}N_4O_3S_2$	8364			1000	0			117

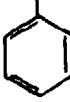
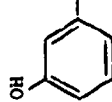
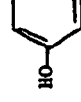
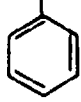
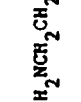
240

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{12}O_2S$	870			141	0			279
$C_9H_{13}BrN_2OS$	99586			50	0(T), 0			224
$C_9H_{13}BrN_2O_4S_2$	99590			100	0(T), 0			224
$C_9H_{13}ClN_2O_4S_2$	104704			75	0(T), 0			224

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{13}MOS_2$	2723		1	400	0(T), 0			247
$C_9H_{13}MOS_2$	2840		1	300	±, 0			247
$C_9H_{13}MOS_2$	2944		1	50	0			248
$C_9H_{13}MO_3S_2$	1047			350	0(T), 0			99

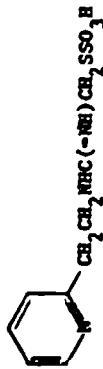
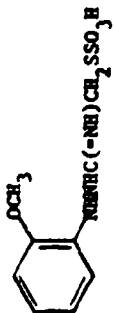
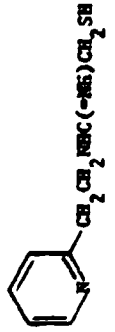
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{13}NO_3S_2$	1112			100	0			109
$C_9H_{13}NO_3S_2$	1172		57	141	0			128
$C_9H_{13}NO_3S_2$	1446			50	0			11
$C_9H_{13}NO_3S_2$	2230			150	0(T), 0			239
$C_9H_{13}NO_3S_2$	2518			400	0			169

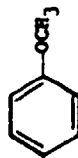
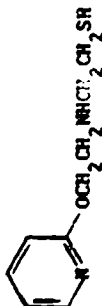
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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{13}NO_3S_2$	3575	 DL-Erythro		100	0			56,242
$C_9H_{13}NO_4S_2$	1991			400	0			212
$C_9H_{13}NO_4S_2$	2144			100	0			110
$C_9H_{13}NS$	217			90	+(T).0			12
$C_9H_{13}NS$	615		1	100	0			252
$C_9H_{13}NS$	1048		6	33	0			99

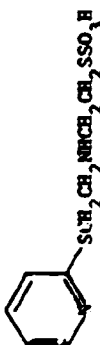
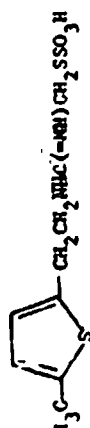
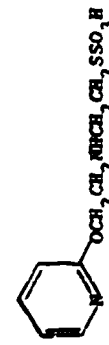
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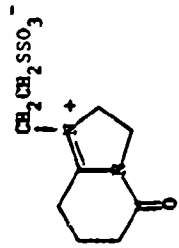
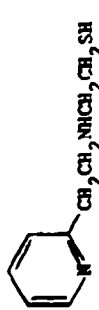
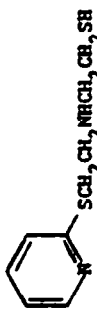
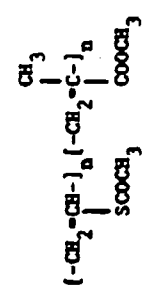
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose, Mg/Kg	Rating	Dose, Mg/Kg	Rating	
$C_9H_{13}NS_2$	927		1	100	0			201
$2 C_9H_{13}NS_2$	2698		1	50	0			257
$C_9H_{13}NS_2$	2705		1	150	0			11
$C_9H_{13}NSe$	806		1	25	0			125
$C_9H_{13}N_3OS$	1600		7	200	0(T), 0			128

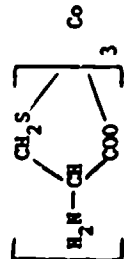
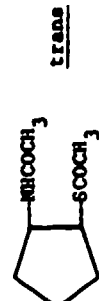
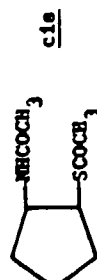
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{13}N_3O_3S_2$	25126			60 0				189
$C_9H_{13}N_3O_3S_2$ 246	39045			32 10				189
$C_9H_{13}N_3O_3S_2$	148746		1.42	60 0(T), 0		400 0		43
$C_9H_{13}N_3O_4S_2$	92440			50 0(T), 0				187
$C_9H_{13}N_3S$	67808		2	64 0				13

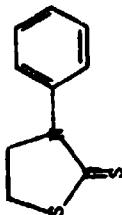
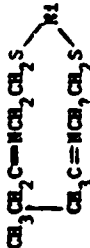
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₉ H ₁₄ F ₇ NO ₅	3096	HOCH ₂ CH ₂ CH(CF ₂ CF ₂ CF ₃)CH ₂ NHCH ₂ CH ₂ SH		150				77
C ₉ H ₁₄ NO ₂ PS ₂	181193	H ₂ NCH ₂ CH ₂ SP(S)(OH)- 		1000	0, ±	1000	0	70
C ₉ H ₁₄ NO ₃ PS	25903			50	0(T).0			165, 243
C ₉ H ₁₄ N ₂ OS	26169		2	80	0(T).0			99

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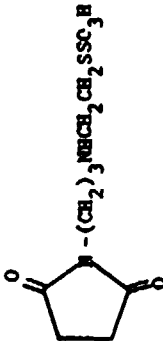
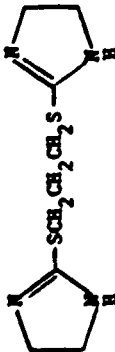
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.C.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{14}N_2O_5S_2$	1492			300	0			26
$C_9H_{14}N_2O_5S_3$	25882			100	0			268
$C_9H_{14}N_2O_5S_3$	39046			18	+ 0	80	+ -	189, 298
$C_9H_{14}N_2O_5S_2$	37678			60	0			99
$C_9H_{14}N_2O_5S_2$	37679			125	0			99

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{14}N_2O_4S_2$	99600			150	0			256
$C_9H_{14}N_2S$	62947			10	0			59
$C_9H_{14}N_2S_2$	35984		2	100	0			268
$C_9H_{14}O_3S$	898			420	0			35

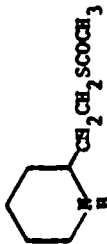
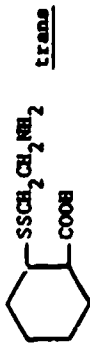
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{15}CoN_3O_6S_3$	3082		46	800	0			76
$C_9H_{15}NO_2S$	1827	 <u>trans</u>		300	0			152
$C_9H_{15}NO_2S$	2296	 <u>cis</u>		600	0			152
$C_9H_{15}NO_2S_2$	51545			500	0			156

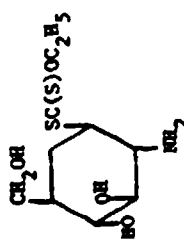
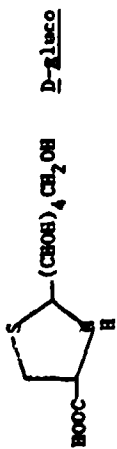
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{15}NO_3S_3$	8309			100 0				144
$C_9H_{15}NO_4S$	1567	$CH_3COOCH_2CH(NHCOCH_3)CH_2SCOOCH_3$		1000 0				46
$C_9H_{15}NO_5S$	3617			1000 0(T), 0				12
$C_9H_{15}NS_2$	1504			500 0				12
$C_9H_{16}N_2MS_2$	3077			100 0				76
$C_9H_{16}N_2O_2S$	91485	$NOCH_2CH_2OCH_2CH_2NHCH_2CH_2SC(O)CH_3$	27	200 0				54,240

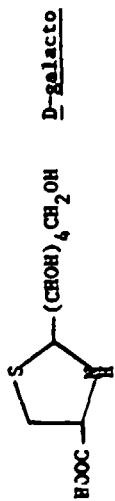
Molecular Formula	W/R Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{16}N_2O_5S_2$	103333	$H_2NCOCH_2CH_2NHCH_2CH_2SC(S)CH_2COCH_3$	27	150	0(T), 0			70
$C_9H_{16}N_2O_5S_3$	137601	$CH_3CONHCH_2CH_2SSC(S)-$ 		30	0	300	±	260
$C_9H_{16}N_2O_3S$	88307	$(CH_3CO)_2NH(CH_3)CH_2CH_2SCOOCH_3$		600	0			59
$C_9H_{16}N_2O_3S_2$	2210	 -CONHCH ₂ CH ₂ SC(O)SCH ₃		187	±			146
$C_9H_{16}N_2O_3S_2$	98060	 -NHC(=NH)CH ₂ SSO ₃ H <u>exo</u>		36	+ ±	200	0(T), 0	290, 299
$C_9H_{16}N_2O_3S_2$	113191	 -NHC(=NH)CH ₂ SSO ₃ H <u>endo</u>		30	+ 0	75	0	290, 299

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{16}N_2O_3S_4$	2211			3160	0(T),0			146
$C_9H_{16}N_2O_5S_2$	76971			250	0(T),0			256
$C_9H_{16}N_2S_2$	2332			10	0			14
$C_9H_{16}N_4S_2$	626		7	90	0			63
$C_9H_{16}O_2S$	122965			320	0			224

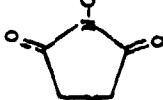
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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{17}NO_5S$	862			14	0			231
$C_9H_{17}NO_5S$	1113		6	14	0			143
$C_9H_{17}NO_2S$	102232	$CH_3CONHC(O)S(CH_2)_5CH_3$		400	0			11
$C_9H_{17}NO_2S_2$	123086			250	0			246
$C_9H_{17}NO_2S_4$	189176	$(CH_3)_2NCH_2CH_2SC(S)S-SC(O)OCH(CH_3)_2$	1	50	+0			70
$C_9H_{17}NO_3S_2$	33772	$H_2NCH_2CH_2SC(O)S(CH_2)_5COOH$	1	600	+0	800	0	156

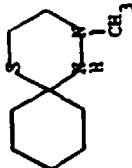
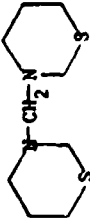
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{17}NO_3S_2$	67657			160 0				223
$C_9H_{17}NO_3S_2$	162455	$CH_3COOCHCH_2CH_2SS(CH_2)_4COOH$		100 0				175
$C_9H_{17}NO_4S$	1540	$CH_3CH_2OOCCHCH_2CH_2SC(O)OCH_2CH_3$		500 0				27
$C_9H_{17}NO_4S_2$	80410	$CH_3C\equiv CC(CH_3)(OH)CH_2CH_2NCHCH_2CH_2SSO_3H$	77	200 0(T).0				54,242
$C_9H_{17}NO_5S_2$	1039		1	500 0				281
$C_9H_{17}NO_7S$	322			2000 0				220

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{17}NO_7S$	977			1050	0			220
$C_9H_{17}NO_7S_2$	3680	$CH_3OCOCH_2CH(OCOCH_3)CH_2NHCH_2CH_2SSO_3H$		1500	0			56, 242
$C_9H_{17}NS$	1513			250	0		1	12
$C_9H_{17}NS$	74170		1	100	0			223
$C_9H_{17}NS_2$	2633			100	0			14

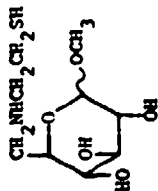
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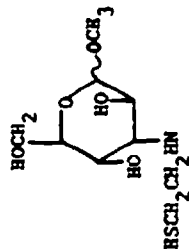
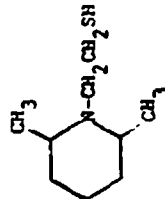
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{17}N_3O_3PS_2$	142824		42	15	0			244
$C_9H_{17}N_3O_3S_2$ 257	76972		45, 57	440	+ (T), 0			256
$C_9H_{17}N_3O_3S_2$	2839	$CH_3SC(=O)SCH_2CH_2NHCONHCH_2CH_2NEtCOCH_3$		800	0			132
$C_9H_{17}N_3S$	121450		2	5	0 (T), 0			221, 299
$C_9H_{18}NO_3PS$	74171		57	90	+			223

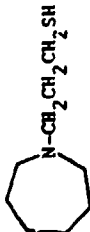
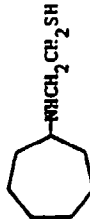
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{18}N_2OS$	3286			150	0			132
$C_9H_{18}N_2OS$	98131	$CH_3CONHC(=NH)S(CH_2)_5CH_3$	6	20	0			11
$C_9H_{18}N_2OS$	122157			100	0			260
$C_9H_{18}N_2O_3S_2$	2264	$CH_3SC(O)SCH_2CH_2NHCONHC(CH_3)_3$		400	0			146
$C_9H_{18}N_2O_3S_4$	2374	$H_2NCH_2CH_2SC(O)SCH_2CH_2CH_2SC(O)SCH_2CH_2NH_2$	2	90	$\pm$, 0			135, 156
$C_9H_{18}N_2O_3S_2$	3537			20	+(T), 0	100	0	98, 299
$C_9H_{18}N_2O_3S_2$	27716			25	+(T), 0	100	0(T)	282, 299

Molecular Formula	w _N Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.J.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₉ H ₁₈ N ₂ S	1785	NC(CH ₂) ₆ NHCH ₂ CH ₂ SH		10				12
C ₉ H ₁₈ N ₂ S	81866			800				59
C ₉ H ₁₈ N ₂ S ₂	61136			1000	0(T).0			92
C ₉ H ₁₈ N ₆ O ₂ S ₂	657	H ₂ NC(=NH)SCH ₂ CH ₂ CONHCH ₂ NHCOCH ₂ CH ₂ SC(=NH)NH ₂	2	50	0			75
C ₉ H ₁₈ OS ₃	157092	(CH ₃) ₃ CS ₂ C(O)SC(CH ₃) ₃		200	0			19
C ₉ H ₁₉ NOS	5803	[(CH ₃) ₂ CH] ₂ NCH ₂ SCOCH ₃		112	4.0			232

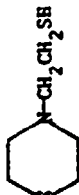
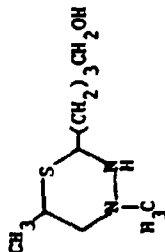
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₉ H ₁₉ NO ₅	42763		1	250 0		450 0		144
C ₉ H ₁₉ NO ₅ ²	81860	(CH ₃) ₃ CNCH ₂ CH ₂ SC(S)OCH ₃ CH ₃	27	50 0				145
C ₉ H ₁₉ NO ₅ ²	157095	(CH ₃) ₃ CNHSC(O)SC(CH ₃) ₃		50 0				19
C ₉ H ₁₉ NO ₅ ²	159092	(CH ₃ CH ₂) ₂ NC(O)SSC(CH ₃) ₃		160 0				19
C ₉ H ₁₉ NO ₅ ²	2150	CH ₃ (CH ₂) ₅ OCONHCH ₂ CH ₂ SH		250	+(T), 0			146
C ₉ H ₁₉ NO ₅ ²	5133	CH ₃ CH(OCH ₃)CH ₂ CH ₂ N(COCH ₃)CH ₂ CH ₂ SH		200 0				195
C ₉ H ₁₉ NO ₅ ²	41263	CH ₃ CH ₂ OCOCH ₂ CH(CH ₃)NHCH ₂ CH(CH ₃)SH		500 0				145
C ₉ H ₁₉ NO ₅ ²	102263	CH ₃ CH ₂ OCOCH ₂ CH ₂ NHCH ₂ C(CH ₃) ₂ SH		500 0				54
C ₉ H ₁₉ NO ₅ ²	157067	(CH ₃ CH ₂) ₂ NC(O)S-OC(CH ₃) ₃		50 0		200 0		19
C ₉ H ₁₉ NO ₅ ³	173116	CH ₃ (CH ₂) ₃ NHCH ₂ CH ₂ SSSC(O)OCH ₂ CH ₃	1	75	0(T), 0			71

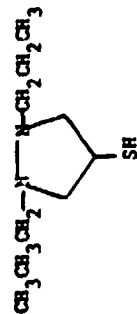
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_9H_{19}NO_2S_4$	1500	$H_2NCOO(CH_2CH_2S)_4H$		600	0			12
$C_9H_{19}NO_3S$	4747	$CH_3OCH_2CH_2OCH_2CH_2N(COCH_3)CH_2CH_2SH$		200	0			195
$C_9H_{19}NO_3S_2$	2864			250	0(T), 0			226
$C_9H_{19}NO_3S_2$	3288			50	0			181,239
$C_9H_{19}NO_3S_2$	9095			50	0			226,293
$C_9H_{19}NO_5S$	1032		1	300	0			194

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{19}NO_5S$	1261	 $(CHOH)_4CH_2OH$ <u>D-Glucose</u>		1000 0				283
$C_9H_{19}NO_5S_2$	1823	 $HOCH_2$ $HOCH_2CH_2NH$	1	1000 0(T), 0				194
$C_9H_{19}NO_5S_2$	4774	$CH_3(CH_2)_3OOCCH_2CH_2NHCH_2CH_2SSO_3H$		1800 0				56, 242
$C_9H_{19}NO_5S_2$	5019	$(CH_3)_2CHCH_2OC(O)CH_2CH_2NHCH_2CH_2SSO_3H$		1000 0				56, 242
$C_9H_{19}NS$	856	 CH_3 $N-CH_2CH_2SH$ CH_3	1	25 0				102, 233

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{19}NS$	887		1	13	S			185,284
$C_9H_{19}NS$	1053		1	15	O			283
$C_5H_{19}NS$	1733		1	100	O			163
$C_9H_{19}NS$	2391		1	45	O			124
$C_9H_{19}NS$	2639		1	30	O			124
$C_9H_{19}NS$	122159			120	O			260

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{19}NS_2$	876	$CH_3(CH_2)_7NHCSSH$	65	200.0				4
$C_9H_{19}NS_3$	199753	$(CH_3)_3CNHCH_2CH_2SC(S)SCH_2CH_3$	27	80.0		300	0(T),0	120
$C_9H_{19}NO_3S$	109343		2	20.0(T),0				221,299
$C_9H_{19}N_3O_3S$	3318	$CH_3CH_2OCOM(OC_2H_5)(CH_2)_3SC(=NH)NH_2$	6	75.0				106
$C_9H_{20}NO_5PS$	4795	$CH_3(CH_2)_3OCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		1000.0				56,243
$C_9H_{20}NO_5PS$	4797	$(CH_3)_2CHCH_2OCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		1000.0				56,243
$C_9H_{20}NO_6PS$	6317	$CH_3CH_2OCH_2CH_2OCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		500.0				56,243
$C_9H_{20}N_2OS$	922		2	350.0(T),0				102,108

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₉ H ₂₀ N ₂ O ₅	1140	CH₃CH(OH)CH₂-	1	75	0			108,207
C ₉ H ₂₀ N ₂ O ₅	88304			800	0			59
C ₉ H ₂₀ N ₂ O ₅	94540	CH ₃ (CH ₂) ₅ CH(OH)CH ₂ SC(=NH)NH ₂	40	40	0			157
C ₉ H ₂₀ N ₂ O ₅	157094	(CH ₃ CH ₂) ₂ NSC(O)N(CH ₂ CH ₃) ₂		125	0	400	0	19
C ₉ H ₂₀ N ₂ O ₅	203924	(CH ₃) ₃ CNHCNHC(CH ₃) ₂ CH ₂ OH		200	0			11
C ₉ H ₂₀ N ₂ O ₅	203923	(CH ₃) ₃ CNHCN(CH ₂ CH ₂ OH) ₂		200	0	600	0	11
C ₉ H ₂₀ N ₂ O ₅ S ₂	3099	(CH ₃) ₃ CNHCOCCH ₂ CH ₂ NHCH ₂ CH ₂ SSO ₃ H		200	0			159

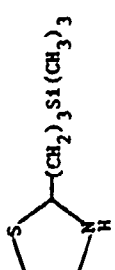
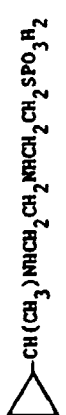
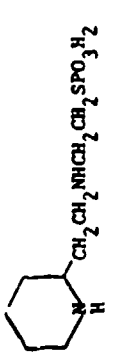
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{20}N_2O_5S_2$	9056	$(CH_3)_3CNEOOCCH_2CH_2NECH_2CH_2SSO_3H$		100 0				165, 262
$C_9H_{20}N_2S$	632		1	200 0				160
$C_9H_{20}N_2S$	842	$CH_3(CH_2)_7SC(=NH)NH_2$	6	25 0				12
$C_9H_{20}N_2S$	27730		2	50 0				121
$C_9H_{20}N_2S_2$	159089	$(C_2H_5)_2NC(S)SN(C_2H_5)_2$		320 $\pm$ 0				19
$C_9H_{20}N_2S_2$	162859	$CH_3(CH_2)_7SSC(=NH)NH_2$	1	10 $\pm$ 0		100 0		11

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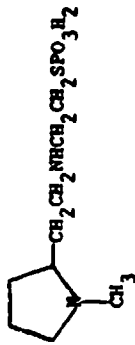
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{20}N_2S_3$	159087	$H_2NC(CH_3)_2CH_2SC(S)SCH_2C(CH_3)_2NH_2$	28	10	±.0	75	0	19
$C_9H_{20}NO_2S_2$	2719	$HSCH_2CH_2NHCONEH(CH_2)_3NHCONEHCH_2CH_2SH$		400	0(T).0			22
$C_9H_{20}NO_4S_4$	108424	$CH_2[CH_2CH_2NHC(-NH)CH_2SSO_3H]_2$		9	0			140
$C_9H_{21}NOS$	2465	$CH_3CH_2CH_2CH(OH)C(CH_3)_2NHCCH_2CH_2SH$		50	0			124
$C_9H_{21}NO_2S$	831	$CH_3(CH_2)_3OCH_2CH(OH)CH_2NHCCH_2CH_2SH$	1	100	0(T).0			103,104,233
$C_9H_{21}NO_3S$	2659	$HOCH_2CH_2OCH_2CH_2OCH_2CH_2CH_2NHCCH_2CH_2SH$		400	0			12
$C_9H_{21}NO_3S$	27738	$CH_3(OCH_2CH_2)_3NHCCH_2CH_2SH$	1	200	0			103,104,121
$C_9H_{21}NO_3S_2$	2078	$CH_3(CH_2)_6NHCCH_2CH_2SSO_3H$		75	±.±			161,239
$C_9H_{21}NO_3S_2$	2231	$CH_3(CH_2)_4CH(CH_3)NHCCH_2CH_2SSO_3H$		75	0			161,239
$C_9H_{21}NO_3S_2$	2381	$CH_3(CH_2)_5C(CH_3)(NH_2)CH_2SSO_3H$		100	0			109

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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₉ H ₂₁ NO ₄ S ₂	2970	HO(CH ₂) ₇ NHCH ₂ CH ₂ SSO ₃ H		300 0				226
C ₉ H ₂₁ NO ₄ S ₂	152919	CH ₃ (CH ₂) ₅ NHCH ₂ CHOHCH ₂ SSO ₃ H		70 0		400	0(T).0	58
C ₉ H ₂₁ NO ₅ S ₃	7983	(CH ₃) ₃ CSO ₂ CH ₂ CH ₂ CH ₂ NHCH ₂ CH ₂ SSO ₃ H		300 0				183
C ₉ H ₂₁ NS	249	(CH ₃) ₂ NCH ₂ CH(CH ₂ SH)(CH ₂) ₃ CH ₃	1	20 0				162,196
C ₉ H ₂₁ NS	358	(CH ₃) ₂ NCH ₂ CH(CH ₂ SH)CH(CH ₃)CH ₂ CH ₃		38 0				162,196
C ₉ H ₂₁ NS	1522	(CH ₃) ₂ CHCH ₂ CH ₂ CH(CH ₃)NHCH ₂ CH ₂ SH		20 0				102,207
C ₉ H ₂₁ NS	1548	CH ₃ (CH ₂) ₆ NHCH ₂ CH ₂ SH	1	30 0				102,207
C ₉ H ₂₁ NS	1696	CH ₃ (CH ₂) ₆ CH(SH)CH ₂ NH ₂	1	60 0				164
C ₉ H ₂₁ NS	2132	CH ₃ (CH ₂) ₄ CH(CH ₃)NHCH ₂ CH ₂ SH	1	25 0				211
C ₉ H ₂₁ NS	2152	CH ₃ CH ₂ CH(CH ₃)CH ₂ CH(CH ₃)NHCH ₂ CH ₂ SH	1	25 0				211
C ₉ H ₂₁ NS	2154	CH ₃ (CH ₂) ₃ CH(CH ₂ CH ₃)NHCH ₂ CH ₂ SH	1	25 0				211

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{21}NS$	2247	$(CH_3CH_2CH_2)_2CHNHCH_2CH_2SH$	1	25	0			211
$C_9H_{21}NSSi$	76739			200	0			244
$C_9H_{21}NS_2$	2817	$H_2NCH_2CH_2SS(CH_2)_6CH_3$	1	15	0			202
$C_9H_{21}NS_3$	917	$N(CH_2CH_2CH_2SH)_3$	1	50	0			25
$C_9H_{21}N_2O_3PS$	108531		42	100	0(T), 0(T)			54, 243
$C_9H_{21}N_2O_3PS$	165931		42, 52	200	0			206

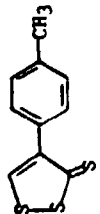
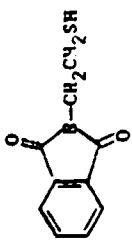
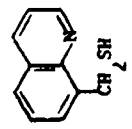
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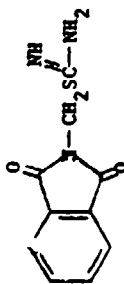
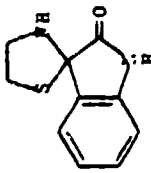
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{21}N_2O_3PS$	176239		42,52	200	T, ±	200	+(T), 0	61
$C_9H_{21}N_2O_5PS$	9056	$(CH_3)_3CNHCOOCH_2CH_2NHCH_2CH_2SPO_3H_2$		125	0			165,243
$C_9H_{21}N_2O_5PS$	29237			1000	S, 5			121
$C_9H_{21}N_3O_3S_2$	4434	$CH_3(CH_2)_{12}NCH_2CH_2SSO_3H$ C(=NH)NH ₂		50	0			315
$C_9H_{21}N_3O_3S_2$	9057	$(CH_3)_3CNHCOOCH_2CH_2NHCH_2CH_2SSO_3H$		200	0			165,242
$C_9H_{21}N_3S_2$	108541	$(CH_3)_3CNHCH_2CH_2SC(S)NHN(CH_3)_2$	27	100	0			54
$C_9H_{21}N_3S_3$	260	$N[CH_2CH_2SC(=NH)NH_2]_3$	4	15	0			23
$C_9H_{22}NO_4P^s$	42597	$(CH_3CH_2)_2CHCHOHCH_2NHCH_2CH_2SPO_3H_2$		180	+(T), +, 0			313

270

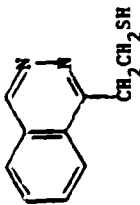
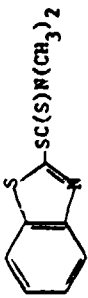
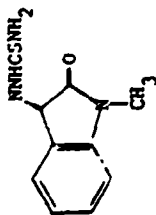
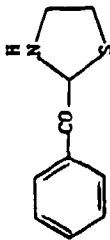
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{22}NO_4PS$	157402	$CH_3(CH_2)_5NHCH_2CHOHCH_2SPO_3H_2$	54	100	0			58
$C_9H_{22}NOS$	1123	$(C_2H_5)_2NCH_2CH(OH)CH_2NHCH_2CH_2SH$		50	0			102,108,207
$C_9H_{22}NOS_2$	2557	$HSCH(CH_3)CH_2NHCH_2CHOHCH_2NHCH_2CH(CH_3)SH$	2	100	0			199
$C_9H_{22}NOS_2$	2701	$CH_3CH_2OCH(CH_2NHCH_2CH_2SH)_2$	1	60	0			199
$C_9H_{22}NOS_2$	2666	$HSCH_2CH_2NHCH_2CH_2OCH_2CHOHCH_2NHCH_2CH_2SH$	2	50	0			199
$C_9H_{22}NOS_4$	2936	$HO_3SSCH_2CH_2NH(CH_2)_3NHCH_2CH_2SSO_3H$		75	0			205
$C_9H_{22}NOS_4$	90201	$HO_3SCH_2CH_2CH_2NH(CH_2)_5NHCH_2CH_2CH_2SSO_3H$		80	0			270
$C_9H_{22}NOS_4$	125689	$HO_3SSCH_2CH_2CH_2NH(CH_2)_4NHCH_2CH_2SSO_3H$		40	0			270
$C_9H_{22}N_2S$	958	$CH_3(CH_2)_3NHCH_2CH_2NHCH_2CH_2CH_2SH$	2	50	0			231
$C_9H_{22}N_2S$	1045	$H_2N(CH_2)_6NHCH_2CH_2CH_2SH$	2	60	0(T)			231
$C_9H_{22}N_2S$	1063	$(CH_3CH_2)_2N(CH_2)_3NHCH_2CH_2SH$	2	50	0			102

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₉ H ₂₂ N ₂ S	1730	H ₂ N(CH ₂) ₇ NHCH ₂ CH ₂ SH	2	100	0			207
C ₉ H ₂₂ N ₂ S	156792	CH ₃ CH ₂ NH(CH ₂) ₅ NHCH ₂ CH ₂ SH	2	90	0(T), 0	175	0	188
C ₉ H ₂₂ N ₂ S ₂	2715	HSCH ₂ CH ₂ NH(CH ₂) ₅ NHCH ₂ CH ₂ SH	2	100	±, 0			199
C ₉ H ₂₂ N ₂ O ₃ PS	125052	(CH ₃) ₂ CENHC[=NCH(CH ₃) ₂]NHCH ₂ CH ₂ SPO ₃ H ₂	42	30	0(T), 0	200	0	1,243
C ₉ H ₂₂ N ₂ O ₃ PS	32062	(CH ₃) ₃ CNHCNHCH ₂ CH ₂ NHCH ₂ CH ₂ SPO ₃ H ₂		100	±, 0			165
C ₉ H ₂₂ N ₂ PS ₃	2101			400	0			186
C ₉ H ₂₃ NO ₃ SS1	38486	(CH ₃ O) ₃ Si(CH ₂) ₃ N(CH ₃)CH ₂ CH ₂ SH		36	0			244
C ₉ H ₂₃ N ₂ O ₃ PS	165930	(C ₂ H ₅) ₂ NCH ₂ CH ₂ CH ₂ NHCH ₂ CH ₂ SPO ₃ H ₂	45, 52	75	0	200	0(T), 0	134, 206
C ₉ H ₂₃ N ₂ O ₃ S ₂	33768	H ₂ N(CH ₂) ₄ NH(CH ₂) ₃ NHCH ₂ CH ₂ SSO ₃ H	7	192	0(T), 0(T)			288

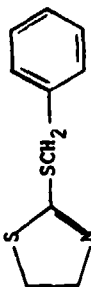
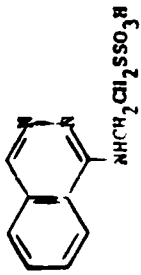
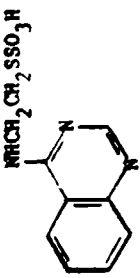
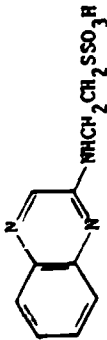
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_9H_{23}N_3S$	1682	$H_2N(CH_2)_3N(CH_3)(CH_2)_3NHCH_2CH_2SH$	3	25	0			207
$C_9H_{23}N_3S$	35980	$H_2N(CH_2)_4NH(CH_2)_3NHCH_2CH_2SH$	16	80	0(T), 0	400	0	288
$C_9H_{24}N_2O_6P_2S_2$	3695	$H_2O_3PSCH_2CH_2NH(CH_2)_5NHCH_2CH_2SPO_3H_4$	49, 58	50	0			205
$C_9H_{24}N_2O_6P_2S_2$	125688	$H_2O_3PSCH_2CH_2CH_2NH(CH_2)_4NHCH_2CH_2SPO_3H_2$	44	40	0			270
$C_{10}H_8F_{15}NO_3S_2$	60185	$CF_3(CF_2)_6CH_2NHCH_2CH_2SSO_3H$		180	+(T), 0			59
$C_{10}H_8S_3$	912			141	0			272
$C_{10}H_9NO_2S$	31			400	0(T), ±, 0			62
$C_{10}H_9NS$	750			400	0(T), 0			26

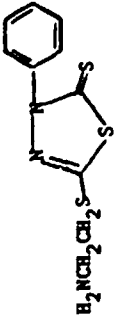
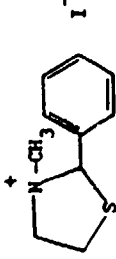
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_9N_3OS$	57659			250	0(T), 0			11
$C_{10}H_9N_3O_2S$	2081		6	75	0			289
$C_{10}H_{10}BrN_3OS$	75719			200	0			11
$C_{10}H_{10}N_2OS$	95566			250	0			66

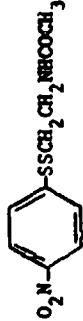
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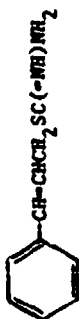
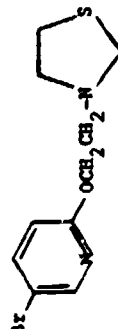
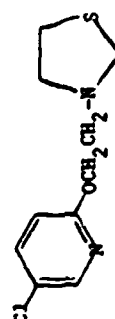
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₀ H ₄ O ₂ S	1529		1	75	0			128
C ₁₀ H ₄ N ₄ S ₂	776			250	0			216
C ₁₀ H ₄ N ₄ O	2588			200	0			3
C ₁₀ H ₁₁ NOS	95567		1	250	0			66

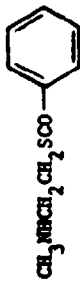
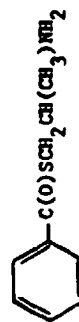
Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{11}NO_5$	2689			150	0			132
$C_{10}H_{11}NO_3$	695			200	S			250
$C_{10}H_{11}NO_3$	6372			250	0			117
$C_{10}H_{11}NO_4$	142069			150	0			290
$C_{10}H_{11}NO_4$	156803			500	+,±,0	1000	0	245

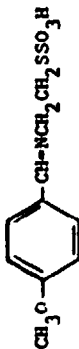
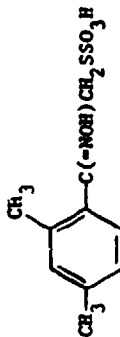
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{11}NO_5S_2$	3360		57	600	+(T).0	1500	0	21
$C_{10}H_{11}NS_2$	84		1	400	0			26
$C_{10}H_{11}N^+O_3S_2$	1528		57	150	0			128
$C_{10}H_{11}N^+O_3S_2$	1747		42, 57	150	0			128
$C_{10}H_{11}N^+O_3S_2$	176606			400	+, ±	600	0	7

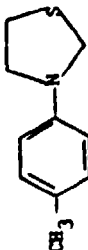
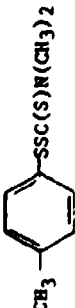
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{11}N_3S_2$	28350			150	$\pm$			11
$C_{10}H_{11}N_3S_3$	189175		27	100	$\pm$	500	0(T).0	70
$C_{10}H_{12}BrNS_2$	6131			100	0			129
$C_{10}H_{12}INS$	2927			100	0			132

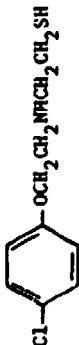
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{12}N_2OS$	80862			200 0				92
$C_{10}H_{12}N_2O_2S$	82409			1000 0(T), 0		1000 0		89,238
$C_{10}H_{12}N_2O_3S_2$	923			100 0				201
$C_{10}H_{12}N_2O_3S_2$	6374			600 0				117
$C_{10}H_{12}N_2O_8S_4$	6310		58	600 0				99

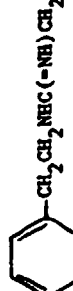
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Referenced
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{12}N_2S$	1083		1	30	0			21
$C_{10}H_{12}N_2S_2$	80863			400	0			92
$C_{10}H_{12}O_2S$	900			105	0			35
$C_{10}H_{13}BrN_2OS$	99576		1	80	0(T), 0			157, 224
$C_{10}H_{13}ClN_2OS$	104701		1	75	0(T), 0	200	0	157, 224

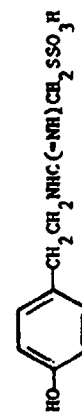
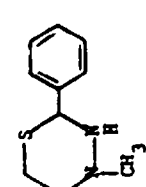
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{13}ClN_2O_3S_3$	39047			16	+(T), 0	400	+(T)	98,275,299
$C_{10}H_{13}NOS$	1506			900	0			12
$C_{10}H_{13}NOS$	2263			593	0			14
$C_{10}H_{13}NOS$	2636			200	0			14
$C_{10}H_{13}NOS$	61127		27	560	+0			145,240
$C_{10}H_{13}NOS$	92982		27	150	+(T), ±	446	0	54,240

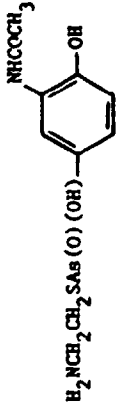
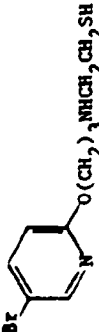
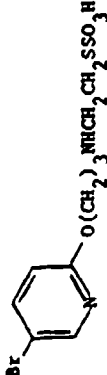
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{13}NO_2Se$	807			30	0			125
$C_{10}H_{13}NO_3S$	186682			600	0			70
$C_{10}H_{13}NO_4S_2$	1897		57	400	0			261
$C_{10}H_{13}NO_4S_2$	3683			75	0			56, 242
$C_{10}H_{13}NO_4S_2$	6313		57	100	0			56

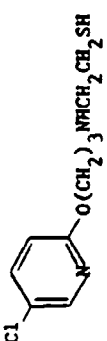
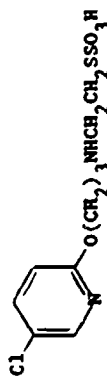
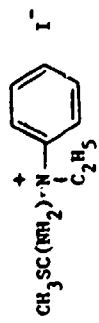
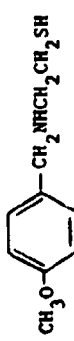
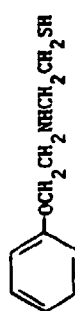
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{13}NS$	2429			400	0			12
$C_{10}H_{13}NS_3$	2686			200	0			153, 138
$C_{10}H_{13}N_2OS$	659			100	0			75
$C_{10}H_{13}N_3O_2S$	2342		6	400	0			51

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{14}ClNOS$	3307			75	0			195
$C_{10}H_{14}ClNO_4S_2$	3071			100	$\pm, 0$			192, 226
$C_{10}H_{14}ClNS$	786			1000	$\pm$			216
$C_{10}H_{14}N_2OS$	150245			300	0			11
$C_{10}H_{14}N_2OS$	150249			150	$\pm, 0$	225	$\pm, 0$	238
$C_{10}H_{14}N_2OS$	180034			600	0			89

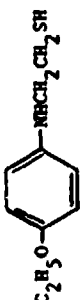
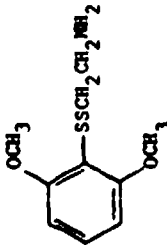
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{14}N_2O_5S_2$	177667		1	100 $\pm$ 0		500 0		71
$C_{10}H_{14}N_2O_5S_2$	1867			30 $\pm$		100 0(T) $\pm$		10, 37
$C_{10}H_{14}N_2O_5S_2$	2142			100 0				96
$C_{10}H_{14}N_2O_5S_2$	2187			50 0				10, 37
$C_{10}H_{14}N_2O_5S_3$	2632			400 0(T) 0				14
$C_{10}H_{14}N_2O_5S_3$	8312			40 0(T) 0				98, 282, 299

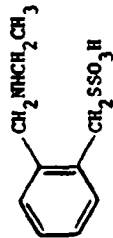
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{14}N_2O_4S_2$	8161			65	+(T), +, 0	200	0(T), 0	98,221,299
$C_{10}H_{14}N_2O_4S_2$	31899			75	±, 0			189
$C_{10}H_{14}N_2S$	81580			100	±, 0			11
$C_{10}H_{14}N_2S$	81862			400	0			59
$C_{10}H_{14}N_2S$	88300			300	0(T), 0			59
$C_{10}H_{14}N_2S$	3243		1	50	0			167

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{14}N_2S_2$	181187		1	60	0	200	0	70
$C_{10}H_{14}N_2S_2$	1766			50	0			20
$C_{10}H_{15}AsN_2O_4S$	81859		42	150	0(T).0			145
$C_{10}H_{15}BrN_2OS$	54202		1	50	0			224
$C_{10}H_{15}BrN_2O_4S_2$	54203			80	+,±	500	0	224

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{15}ClN_2OS$	122961		1	40	0	400	0(T), 0(T)	157
$C_{10}H_{15}ClN_2O_4S_2$	80859			80	0			224
$C_{10}H_{15}ClN_2O_4S_2$	122963			90	+ (T), +, 0	400	0	224
$C_{10}H_{15}IN_2S$	81579			50	0(T), 0(T)			11
$C_{10}H_{15}NOS$	1245		1	90	0(T)			102, 207
$C_{10}H_{15}NOS$	2628		1	50	+ , 0			268

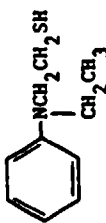
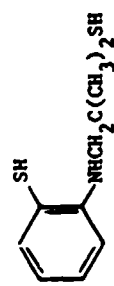
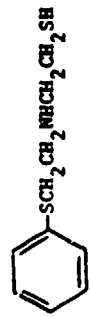
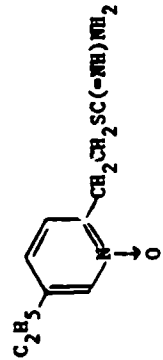
289

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{15}NOS$	4118		1	250	0			107
$C_{10}H_{15}NOS$	148664		1	30	0			188
$C_{10}H_{15}NOS_2$	3540			100	0			195
$C_{10}H_{15}NO_2S_2$	3244		1	25	0			247

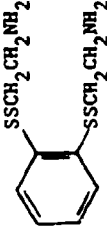
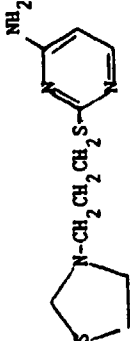
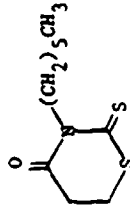
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{15}NO_3S_2$	631		42	75	0			99
$C_{10}H_{15}NO_3S_2$	1256			250	0			99
$C_{10}H_{15}NO_3S_2$	1470			75	0			162
$C_{10}H_{15}NO_3S_2$	2456			50	0			161, 287

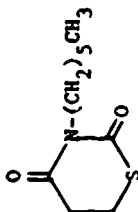
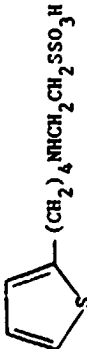
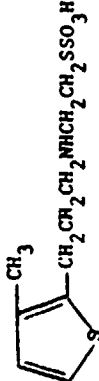
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{15}NO_3S_2$	3574	 <chem>CC(S(=O)(=O)C)C(c1ccccc1)N</chem> L(-), <u>erythro</u>		300 0				45, 242
$C_{10}H_{15}NO_3S_2$	170442	 <chem>CC(S(=O)(=O)C)CCc1ccccc1</chem>		300 T, 0		600	0(T), $\pm$	11
$C_{10}H_{15}NO_3S_3$	4381	 <chem>CC(S(=O)(=O)C)CCNCCc1ccccc1</chem>		50 0				268
$C_{10}H_{15}NO_4S$	2845	 <chem>CC(C)C1C(C)S1CC(S(=O)(=O)C)CCc1ccccc1</chem>		800 0				44
$C_{10}H_{15}NO_4S_2$	2146	 <chem>CC(S(=O)(=O)C)CCNCCc1ccccc1</chem>		100 0				161, 239

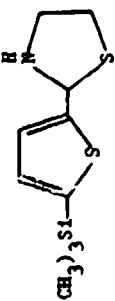
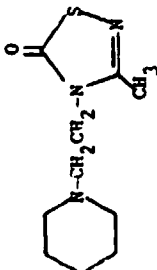
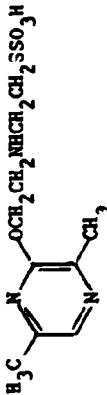
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{15}NO_4S_2$	4701			100	0			181
$C_{10}H_{15}NO_4S_2$	136218			70	0			188
$C_{10}H_{15}NS$	318		1	63	0(T), 0			99
$C_{10}H_{15}NS$	785			400	0			216
$C_{10}H_{15}NS$	828		1	100	0			49
$C_{10}H_{15}NS$	1184		1	25	0			99

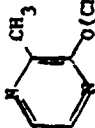
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{15}NS$	1792			200 0				12
$C_{10}H_{15}NS$	3233			40 +,0		150 0(T)		195
$C_{10}H_{15}NS_2$	792			750 0				216
$C_{10}H_{15}NS_2$	3354			50 0				268
$C_{10}H_{15}N_3OS$	1601		7	50 0				128

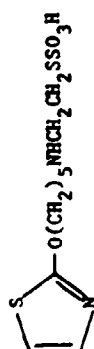
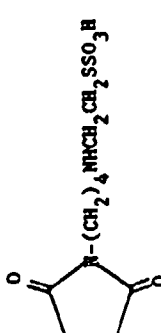
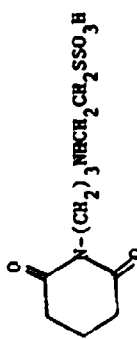
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{15}N_3OS$	98113	$NCCH_2CH_2CH(CN)CH_2NHCH_2CH_2SCOCH_3$ 						

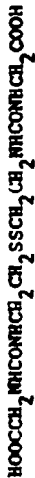
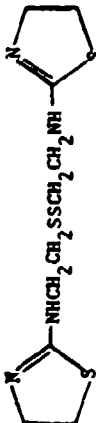
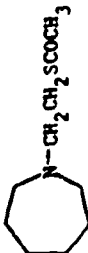
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{16}N_4O_5S_2$	98080			100	0			99
$C_{10}H_{16}N_2S_4$	2515		2	50	0			208
$C_{10}H_{16}N_4S_2$	91497		2,42	70	0(T),0			157
$C_{10}H_{16}O_5S$	1074	$CH_3COOCH(CH_3)CH(SCOCH_3)COOCH_2CH_3$		593	0			257
$C_{10}H_{17}NOS_2$	1719			500	0			64

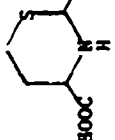
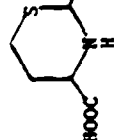
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{17}NO_2S$	2068			200	0			64
$C_{10}H_{17}NO_2S_2$	51986			400	$\pm, \pm$			156
$C_{10}H_{17}NO_3S_3$	3085			200	0	1600	0	192
$C_{10}H_{17}NO_3S_3$	8313			20	0			144, 324
$C_{10}H_{17}NO_3S_3$	9093			50	$\pm, 0$	600	0	144, 324

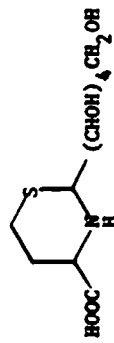
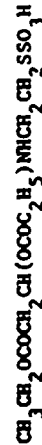
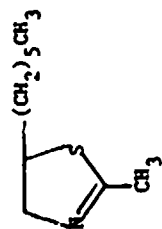
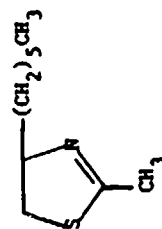
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₀ H ₁₇ NO ₄ S	2067	CH ₃ (CH ₂) ₃ N(COCH ₃)C(O)SCH ₂ CH ₂ COOH		100	0			64
C ₁₀ H ₁₇ NS ₂	2560	[H ₂ C=C(CH ₃)CH ₂ Si(CH ₃) ₂ C=NCH ₃]		150	0			14
C ₁₀ H ₁₇ NS ₂ Si	31870			200	0(T), 0			292
C ₁₀ H ₁₇ N ₃ OS	127015		1	40	0	250	0	157
C ₁₀ H ₁₇ N ₃ O ₄ S ₂	98073			120	0			99

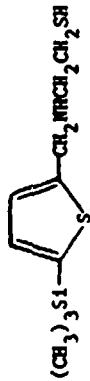
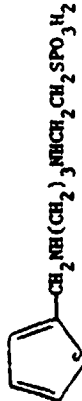
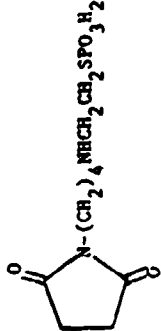
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{17}N_4O_5S_2$	98081			150	0			99
$C_{10}H_{17}N_4O_6S$	351	$H_2NCH(COOH)CH_2CH_2CONHCH(CH_2SH)CONHCH_2COOH$		1500	$\pm, 0$			3
$C_{10}H_{17}N_4S_3$	1872	$H_2C=CHCH_2NHCSNHCH_2CH_2SC(S)NHCH_2CH=CH_2$		800	0			20
$C_{10}H_{18}N_4O_2S$	1264	$\left[\begin{array}{c} -CH-CH_2- \\ \\ SCON(C_2H_5)_2 \end{array} \right]_n \quad \left[\begin{array}{c} -CH_2-CH- \\ \\ CONH_2 \end{array} \right]_n$		500	0			35
$C_{10}H_{18}N_4O_5S_2$	94292	 <u>endo</u>		20	$+, \pm, 0$	60	$\pm$	280
$C_{10}H_{18}N_4O_4S$	2215			100	0			99,160

Molecular Formula	WR Number	Structure	Salt Form	Antifrediation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{18}N_2O_4S_3$	36953			100	0(T), +			244
$C_{10}H_{18}N_2O_5S_2$	84133			150	0(T), 0			256
$C_{10}H_{18}N_2O_5S_2$	99601			70	0			256
$C_{10}H_{18}N_2S_2$	159569		2	40	0(T), 0	150	0	205

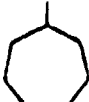
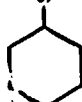
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{18}N_4O_6S_2$	2074			50	0			20
$C_{10}H_{18}N_4S_4$	650			25	0			26
$C_{10}H_{19}NOS$	894			25	0			231
$C_{10}H_{19}NOS_2$	18331	$CH_2(CH_2)_3NHCH_2CH_2SC(S)CH_2COCH_3$	27	56	± 0	150	0	70
$C_{10}H_{19}NO_2S_2$	1718	$CH_3(CH_2)_5NHCSCH_2CH_2COOH$		150	0			64
$C_{10}H_{19}NO_2S_2$	4487			50	0			87

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{19}NO_3S$	2066	$CH_3(CH_2)_5NHCOSCH_2CH_2COOH$ 		1750	0			64
$C_{10}H_{19}NO_3S_2$	5982			50	0			293,295
$C_{10}H_{19}NO_4S$	2265	$CH_3(CH_2)_2OC(O)SCH_2CH_2NHCOO(CH_2)_2CH_3$		500	0			146
$C_{10}H_{19}NO_4S$	2388	$CH_3CH_2OCOCH_2CH(OCOC_2H_5)NHCH_2CH_2SH$	1	1000	0			296
$C_{10}H_{19}NO_5S_2$	3840	$CH_3CH_2OCOCH=CHCH_2CH(CH_3)NHCH_2CH_2SSO_3H$		1000	0			56,242
$C_{10}H_{19}NO_7S$	2043	 D-glucose		1500	0			220
$C_{10}H_{19}NO_7S$	2044	 D-manno		500	0			220

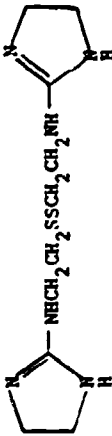
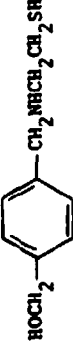
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{19}NO_7S$	2045	 <u>D-galacto</u>		500	0			220
$C_{10}H_{19}NO_7S_2$	2607	 $CH_3CH_2OCOCH_2CH(OCOC_2H_5)NHCH_2CH_2SSO_3H$		600	0			296
$C_{10}H_{19}NS$	1072	 $(CH_2)_5CH_3$		1050	0 (T), 0			47
$C_{10}H_{19}NS$	1117	 $(CH_2)_5CH_3$		1050	0			47
$C_{10}H_{19}NS$	2307	 $CH_2NHCH_2CH_2SH$	1	40	0			124

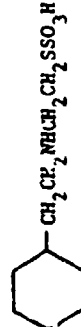
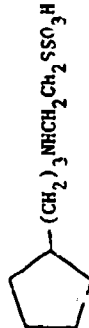
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Referred
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{19}NS$	2660			50	0			12
$C_{10}H_{19}NS_2S_1$	37696			200	0			292
$C_{10}H_{19}NS_3$	136864			80	0(T).0			260
$C_{10}H_{19}N_2O_3PS_2$	156793		44	25	0	600	0	188
$C_{10}H_{19}N_2O_5PS$	84134		42	120	0			256

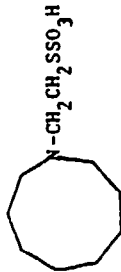
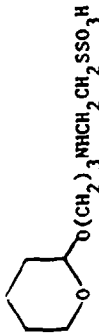
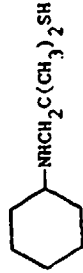
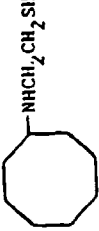
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{19}N_2O_5PS$	114393		57	80	0 (T), 0			256
$C_{10}H_{19}N_3S$	76966		7	40	0 (T), 0			223
$C_{10}H_{20}NO_7PS$	4475	$CH_3CH_2OCOCH_2CHNHCH_2CH_2SPO_3H_2$ $COOCH_2CH_3$		800	0			56,243
$C_{10}H_{20}N_2O_5S_2$	2103	$(C_2H_5)_2NCH_2CH_2NHCSSCH_2CH_2COOH$	44	593	0			64
$C_{10}H_{20}N_2O_5S_2$	151320	$H_2NCH_2CH_2SC(O)-(CH_2)_4-C(O)SCH_2CH_2NH_2$	2	300	+,-	500	0	188
$C_{10}H_{20}N_2O_5S_4$	823	$CH_3CONHCH_2CH_2SSCH_2CH_2SSCH_2CH_2NHCOCH_3$		200	+,-			208
$C_{10}H_{20}N_2O_5S_4$	1959	$H_2NCH_2CH_2SC(O)S(CH_2)_4SC(O)SCH_2CH_2NH_2$	2	80	0			135

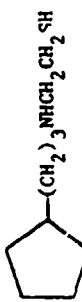
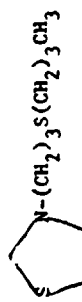
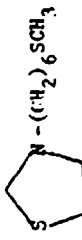
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{20}N_2O_3S_2$	4265			10	+, +, 0	50	+, ±	190, 24
$C_{10}H_{20}N_2O_3S_2$	37719			20	+, +	200	0(T)	124, 275
$C_{10}H_{20}N_2O_3S_2$	150637			15	+, +, 0	50	+, ±, 0	98, 29
$C_{10}H_{20}N_2O_3S_3$	2699	$CH_3(CH_2)_3N=C(SCH_2CH=CH_2)NHCH_2CH_2SSO_3H$		80	0			297
$C_{10}H_{20}N_2O_3S_3$	150637			15	+, 0	175	0(T), 0	120, 299, 3
$C_{10}H_{20}N_2O_4S_2$	3601	$HOOCCH(CH_3)NHCH_2CH_2SSCH_2CH_2NHCH(CH_3)COOH$		100	0(T), 0			136

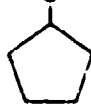
Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{20}N_2O_4S_2$	149526			50	0	800	0	299
$C_{10}H_{18}N_4PtS_4$	1875	$[(-SCH_2CH_2)_2NCH_2CH_2N(CH_2CH_2S^-)_2]Pt$		400	0			76
$C_{10}H_{20}N_2S$	166825		1.42	8	+0	15	+0	98
$C_{10}H_{20}N_2S_2$	932		6	50	0			143
$C_{10}H_{20}N_2S_2$	2037			175	+(T).0			152
$C_{10}H_{20}N_2S_4Zn_2$	1879	$Zn(-SCH_2CH_2)_2NCH_2CH_2N(CH_2CH_2S^-)_2Zn$		593	0			76
$C_{10}H_{20}N_2S_6$	751	$(CH_3)_2NC(S)SCH_2CH_2SSCH_2CH_2SC(S)N(CH_3)_2$		700	0			259

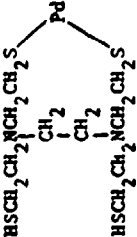
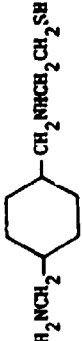
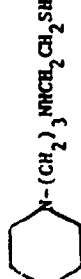
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{20}N_4S_3$	183330		27	80 0		300 0		70
$C_{10}H_{20}N_6S_2$	649		11	25 0				26
$C_{10}H_{21}NOS$	111	$CH_3(CH_2)_6COSCH_2CH_2NH_2$		600	+0			81
$C_{10}H_{21}NOS$	782	$CH_3(CH_2)_6CONHCH_2CH_2SH$		500	+0			36
$C_{10}H_{21}NOS$	1789			100	0			211
$C_{10}H_{21}NO_2S$	2929	$(CH_3)_2CHCH_2OCOCH(CH_3)CH_2NHCH_2CH_2SH$	27	500	0			161

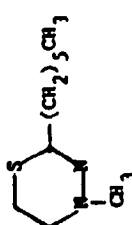
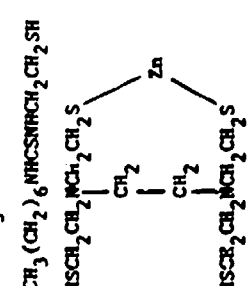
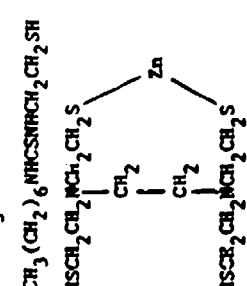
Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{21}NO_2S$	3698	$CH_3(CH_2)_3OCH_2CH_2N(COCH_3)CH_2CH_2SH$		100	0			195
$C_{10}H_{21}NO_2S$	41264	$CH_3CH_2OC(O)CH_2CH(CH_3)NHCH_2C(CH_3)_2SH$		500	0			145
$C_{10}H_{21}NO_2S_2$	181159	$H_2NC(CH_3)_2CH_2SSCH_2CH_2COOCH(CH_3)_2$	27	50	+ , 0	250	0	70
$C_{10}H_{21}NO_2S_3$	169415	$CH_3(CH_2)_3NHCH_2CH_2SSSC(O)OCH(CH_3)_2$		50	0			71
$C_{10}H_{21}NO_3S$	5132	$CH_3CH_2OCH_2CH_2OCH_2CH_2N(COCH_3)CH_2CH_2SH$		150	0			195
$C_{10}H_{21}NO_3S_2$	2401			100	+			16 , 239
$C_{10}H_{21}NO_3S_2$	2571			50	+ , +			226 , 293
$C_{10}H_{21}NO_3S_2$	3235			112	0(T) , 0(T)			226 , 293

Molecular Formula	WR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{21}NO_5S_2$	125439			100	0			11
$C_{10}H_{21}NO_5S_2$	2918			200	0			226
$C_{10}H_{21}NO_5S_3$	6298			275	0			183
$C_{10}H_{21}NS$	1424		1	100	0			216
$C_{10}H_{21}NS$	2394		1	25	0			124

Molecular Formula	WR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{21}NS$	2640		1	25	0			124
$C_{10}H_{21}NS_2$	154575		1	80	0	300	0(T), 0	298
$C_{10}H_{21}NS_2$	154976		1	60	0	300	0	298
$C_{10}H_{21}N_2O_3PS$	166824		42, 57	20	+0	20	+0	299
$C_{10}H_{21}N_3O_2S$	2266	$CH_3(CH_2)_2NHCOSCH_2CH_2NHCONH(CH_2)_2CH_3$		200	0			139
$C_{10}H_{21}N_3O_2S$	1873	$(CH_3)_2CHNHCSNHCH_2CH_2SCSNHCH(CH_3)_2$		150	0			139

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{22}NO_3P_3$	69884	$CH_3CONHCH_2CH_2SSP(S)(OCH_2CH_2CH_3)_2$		150 0				301
$C_{10}H_{22}NO_3P_3$	69885	$CH_3CONHCH_2CH_2SSP(S)[OCH(CH_3)_2]_2$		56 0				301
$C_{10}H_{22}NO_4P_4$	25872			100 +,0				121
$C_{10}H_{22}NO_6P_5$	9062	$CH_3O(CH_2)_4OCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		1000 0				165,243
$C_{10}H_{22}N_2OS$	30461		2	225 0(T),0				108, 271
$C_{10}H_{22}N_2O_5S$	2859	$(CH_3)_2NCH_2CH_2OCOCH(CH_3)CH_2NHCH_2CH_2SH$	1	100 0				159
$C_{10}H_{22}N_2O_5S_2$	1687	$CH_3(CH_2)_5NHC(CH_3)=NCH_2CH_2SSO_3H$		40 0				96
$C_{10}H_{22}N_2O_5S_2$	166823	$(C_2H_5)_3CCN_2NHC(=NH)CH_2SSO_3H$		18 +,+		45 +,±		143

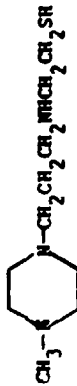
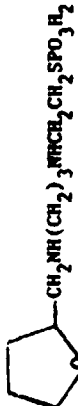
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{22}N_2O_6S_4$	90203			200	0			62
$C_{10}H_{22}N_2PdS_4$	1882		55	200	0			76
$C_{10}H_{22}N_2S$	1680		2	100	0			207
$C_{10}H_{22}N_2S$	25210		2	60	0			121
$C_{10}H_{22}N_2S$	3148		6	30	0			12

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{22}N_2S$	81867			100	0			59
$C_{10}H_{22}N_2S_2$	2289	$CH_3(CH_2)_6NHCSNHCH_2CH_2SH$ 		200	0			14
$C_{10}H_{22}N_2S_4Zn$	1881			593	0	76		76
$C_{10}H_{22}N_4O_2S_2$	3852	$HSCH_2CH_2NHCH_2CH_2NHCOONHCH_2CH_2NHCH_2CH_2SH$	2	30	0			147
$C_{10}H_{22}N_4O_2S_2$	4430	$H_2NOCCH(CH_3)NHCH_2CH_2SSCH_2CH_2NHCH(CH_3)COONH_2$		560	+(T), ±			136
$C_{10}H_{22}N_4O_2S_2$	139245	$(H_2NOCCH_2CH_2NHCH_2CH_2S-)_2$	28	500	+(T)			1
$C_{10}H_{22}N_4O_6S_4$	2646	$(H_2NOCNHCH_2CH_2SSO_2CH_2CH_2-)_2$		500	0			135
$C_{10}H_{22}O_3S_2$	117405	$CH_3(CH_2)_9SSO_3H$	57	70	0			11

Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{23}NO_5$	1190	$CH_3(CH_2)_5CHOHCH_2NHCH_2CH_2SH$	1	50	0			207
$C_{10}H_{23}NO_5$	1781	$(CH_3)_2C(OH)CH_2CH_2CH_2CH(CH_3)NHCH_2CH_2SH$		150	0			12
$C_{10}H_{23}NO_5$	2855	$CH_3(CH_2)_5CH(CH_2OH)NHCH_2CH_2SH$	1	25	0			124
$C_{10}H_{23}NO_5$	3999	$CH_3(CH_2)_3C(C_2H_5)(OH)CH_2NHCH_2CH_2SH$	1	25	0			103,104,111
$C_{10}H_{23}NO_5$	1124	$CH_3(CH_2)_4OCH_2CHOHCH_2NHCH_2CH_2SH$	1	50	0			103,104,201
$C_{10}H_{23}NO_5$	3272	$CH_3(CH_2)_3OCH_2CH_2OCH_2CH_2NHCH_2CH_2SH$		40	0			195
$C_{10}H_{23}NO_5$	4703	$CH_3(CH_2)_4CHOHCHOHCH_2NHCH_2CH_2SH$	1	20	0			103,104,121
$C_{10}H_{23}NO_5$	5025	$CH_3(CH_2)_4CHOHCHOHCH_2NHCH_2CH_2SH$ racemate II	1	20	0			103,104,121
$C_{10}H_{23}NO_5$	5026	$CH_3(CH_2)_4CHOHCHOHCH_2NHCH_2CH_2SH$ racemate I	1	50	0			103,104,121
$C_{10}H_{23}NO_5$	1250	$CH_3(CH_2)_7CH(CH_2NH_2)SSO_3H$		100	0			11
$C_{10}H_{23}NO_5$	1606	$CH_3(CH_2)_5CH(CH_3)NHCH_2CH_2SSO_3H$		75	+, -	1500	0	161,239

Molecular Formula	WR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₀ H ₂₃ NO ₃ S ₂	1618	CH ₃ (CH ₂) ₇ NHCH ₂ CH ₂ SSO ₃ H	57	30	+(T), +	500	0	161,239
C ₁₀ H ₂₃ NO ₃ S ₂	2079	CH ₃ (CH ₂) ₃ CH(C ₂ H ₅)CH ₂ NHCH ₂ CH ₂ SSO ₃ H		120	+(T), ±			161,239
C ₁₀ H ₂₃ NO ₃ S ₂	2246	CH ₃ (CH ₂) ₄ CH(C ₂ H ₅)NHCH ₂ CH ₂ SSO ₃ H		75	±, 0			161,239
C ₁₀ H ₂₃ NO ₃ S ₂	2307	H ₂ NCH ₂ (CH ₂) ₈ CH ₂ SSO ₃ H		1000	0			68
C ₁₀ H ₂₃ NO ₃ S ₂	2402	CH ₃ (CH ₂) ₃ CH(CH ₂ CH ₂ CH ₃)NHCH ₂ CH ₂ SSO ₃ H		75	±, ±			161,239
C ₁₀ H ₂₃ NO ₃ S ₂	2690	(C ₂ H ₅) ₃ CCCH ₂ NHCH ₂ CH ₂ SSO ₃ H		50	+, 0			226
C ₁₀ H ₂₃ NO ₃ S ₂	159570	(CH ₃) ₃ CCCH ₂ C(CH ₃) ₂ NHCH ₂ CH ₂ SSO ₃ H		50	+, 0			223
C ₁₀ H ₂₃ NO ₄ S ₂	2865	CH ₃ (CH ₂) ₅ CH(CH ₂ OH)NHCH ₂ CH ₂ SSO ₃ H		80	±, 0			226
C ₁₀ H ₂₃ NO ₄ S ₂	2971	HO(CH ₂) ₈ NHCH ₂ CH ₂ SSO ₃ H		200	+, 0	1000	0	226
C ₁₀ H ₂₃ NO ₄ S ₂	152910	CH ₃ (CH ₂) ₆ NHCH ₂ CH(OH)CH ₂ SSO ₃ H		50	+, 0	300	0(T), 0(T), 0	58

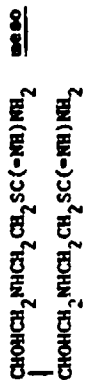
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{23}NO_5S_3$	7000	$CH_3(CH_2)_5SO_2CH_2CH_2N(CH_2CH_2SSO_3H)$		150 0				185
$C_{10}H_{23}NS$	7	$[CH_3(CH_2)_3]_2NCH_2CH_2SH$	1	100 0(T), 0(T), 0				11
$C_{10}H_{23}NS$	149	$CH_3(CH_2)_3CH(C_2H_5)CH_2N(CH_2CH_2CH_2SH)$	1	100 0				102, 207
$C_{10}H_{23}NS$	225	$[(CH_3)_2CHCH_2]_2NCH_2CH_2SH$		375 0				12
$C_{10}H_{23}NS$	226	$[CH_3CH_2CH(CH_3)]_2NCH_2CH_2SH$		100 0				12
$C_{10}H_{23}NS$	230	$CH_3(CH_2)_7N(CH_2CH_2CH_2SH)$		40 +, 0		200 0		12
$C_{10}H_{23}NS$	256	$(CH_3)_2NCH_2CH(CH_2SH)(CH_2)_4CH_3$	1	50 0				198
$C_{10}H_{23}NS$	1507	$(CH_3)_3OCH_2C(CH_3)_2N(CH_2CH_2CH_2SH)$		15 0				223
$C_{10}H_{23}NS$	1681	$CH_3(CH_2)_5CH(CH_3)N(CH_2CH_2CH_2SH)$	1	50 0(T), 0(T)				207
$C_{10}H_{23}NS$	2572	$(CH_3)_2CHCH_2C(CH_3)_2CH_2N(CH_2CH_2CH_2SH)$	1	25 0				124
$C_{10}H_{23}NS$	32564	$H_2N(CH_2)_{10}SH$	1	60 0				313

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{23}N_2O_3PS$	190072		42	400	+,+,+,0	1000	0	126
$C_{10}H_{23}N_2O_3PS$	193692		42	90	±,0	400	0(T),0	126
$C_{10}H_{23}N_3S$	2395		3	25	0			124
$C_{10}H_{23}N_2O_4PS$	70037			320	±,0			145,243
$C_{10}H_{24}NO_2PS_2$	91483	$(CH_3)_3CNHCH_2CH_2SP(S)(OC_2H_5)_2$	27	8	0(T),0			54,241
$C_{10}H_{24}NO_2PS_3$	186683	$CH_3(CH_2)_3N(CH_2)_3S-SP(S)(OC_2H_5)_2$	1	30	0	200	0	70
$C_{10}H_{24}NO_3PS$	91482	$(CH_3)_3CNHCH_2CH_2SP(O)(OC_2H_5)_2$	27	4	0			54

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₀ H ₂₄ MO ₃ PS	75232	CH ₃ (CH ₂) ₇ NEICH ₂ CH ₂ SPO ₃ H ₂	57	100	+,+,+,0	200	+(T),+,0	148
C ₁₀ H ₂₄ MO ₃ PS	159945	(CH ₃) ₃ OCH ₂ C(CH ₃) ₂ NEICH ₂ CH ₂ SPO ₃ H ₂	57	75	+,0	150	0	223
C ₁₀ H ₂₄ MO ₄ PS	152913	CH ₃ (CH ₂) ₆ NEICH ₂ CHOHCH ₂ SPO ₃ H ₂	54	150	+(T),0			58
C ₁₀ H ₂₄ MO ₅ PS	25077	CH ₃ (CH ₂) ₄ CHOHCHOHCH ₂ NEICH ₂ CH ₂ SPO ₃ H ₂		100	+,0			121
C ₁₀ H ₂₄ N ₂ MS ₂	3073	(CH ₃ CH ₂ CH ₂ NEICH ₂ CH ₂ S) ₂ N1		20	0			171
C ₁₀ H ₂₄ N ₂ MS ₂	3074	[(CH ₃) ₂ CHNEICH ₂ CH ₂ S] ₂ N1		12.5	0			171
C ₁₀ H ₂₄ N ₂ OS	1787	HOCH ₂ C(CH ₃) ₂ NHC(CH ₃) ₂ CH ₂ NEICH ₂ CH ₂ SH		25	0			12
C ₁₀ H ₂₄ N ₂ O ₂ S ₂	1463	(CH ₃) ₂ N(CH ₂) ₃ SSO ₂ (CH ₂) ₃ N(CH ₃) ₂	2	150	0			25
C ₁₀ H ₂₄ N ₂ O ₂ S ₂	2192	H ₂ N(CH ₂) ₅ SO ₂ S(CH ₂) ₅ NH ₂	2	50	0			203
C ₁₀ H ₂₄ N ₂ O ₂ S ₂	2964	CHOHCH ₂ NEICH(CH ₃)CH ₂ SH CHOHCH ₂ NEICH(CH ₃)CH ₂ SH meso, dl		20	0			302

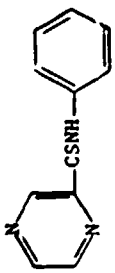
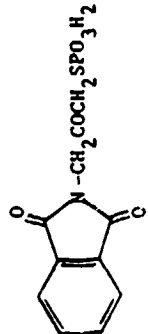
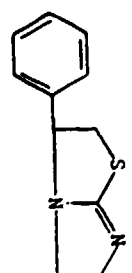
Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{24}N_2O_5S_2$	2987	CHOHCH₂NHCH(CH₃)CH₂SH CHOHCH₂NHCH(CH₃)CH₂SH meso, meso	2	20	0			302
$C_{10}H_{24}N_2O_5S_2$	3097	HOCH ₂ CH ₂ CH ₂ NHCH ₂ CH ₂ SSCH ₂ CH ₂ NHCH ₂ CH ₂ CH ₂ OH	2	315	+,-0			111
$C_{10}H_{24}N_2O_5S_2$	2495	HSCH ₂ CH ₂ NHCH ₂ CHOHCH ₂ OCH ₂ CHOHCH ₂ NHCH ₂ CH ₂ SH	2	50	0			211
$C_{10}H_{24}N_2O_5S_2$	3568	(BOCH ₂) ₂ CNHCH ₂ CH ₂ SSCH ₂ CH ₂ NHCH(CH ₂ OH) ₂	2	800	+(T), +	1500	0	111
$C_{10}H_{24}N_2O_5S_2$	3835	HO(CH ₂) ₆ NHCH ₂ CH ₂ NHCH ₂ CH ₂ SSO ₃ H		400	0			111,121
$C_{10}H_{24}N_2O_5S_2$	29563	HOCH ₂ CHOHCH ₂ NHCH ₂ CH ₂ SSCH ₂ CH ₂ NHCH ₂ CHOHCH ₂ OH	2	800	S,S			121
$C_{10}H_{24}N_2O_6P_2S_2$	90204	H₂O₃PSCH₂CH₂NH  NHCH₂CH₂SPO₃H₂ trans	47	20	0			62
$C_{10}H_{24}N_2O_6S_4$	2647	HO ₃ SSCH ₂ C(CH ₃) ₂ NHCH ₂ CH ₂ NHC(CH ₃) ₂ CH ₂ SSO ₃ H		90	0			109
$C_{10}H_{24}N_2O_6S_4$	2651	(HO ₃ SCH ₂ CH ₂ CH ₂ NHCH ₂ CH ₂ S-) ₂		2000	+,+,0			117

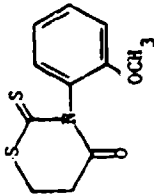
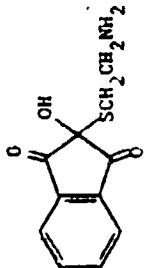
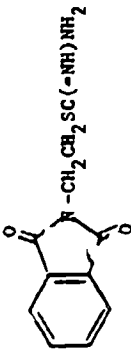
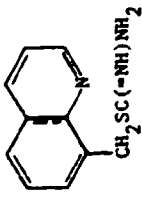
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{24}N_2O_8S_4$	8365	$HO_3SSCH_2CH_2NH(CH_2)_6NHCH_2CH_2SSO_3H$		50	0			205
$C_{10}H_{24}N_2O_8S_4$	90202	$HO_3SSCH_2CH_2CH_2NH(CH_2)_4NHCH_2CH_2CH_2SSO_3H$		70	0			270
$C_{10}H_{24}N_2O_8S_4$	2965	$CH(OH)CH_2NHCH(CH_3)CH_2SSO_3H$ $CH(OH)CH_2NHCH(CH_3)CH_2SSO_3H$ <u>meso, meso</u>		100	0			302
$C_{10}H_{24}N_2O_8S_4$	2988	$CH(OH)CH_2NHCH(CH_3)CH_2SSO_3H$ $CH(OH)CH_2NHCH(CH_3)CH_2SSO_3H$ <u>meso, dl</u>		100	0			302
$C_{10}H_{24}N_2PdS_2$	2826	$(CH_3CH_2CH_2NHCH_2CH_2S)_2Pd$		5	0			171
$C_{10}H_{24}N_2S$	1692	$H_2N(CH_2)_8NHCH_2CH_2SH$	2	100	0			207
$C_{10}H_{24}N_2S$	2415	$CH_3(CH_2)_5NHCH_2CH_2NHCH_2CH_2SH$	2	25	0			211
$C_{10}H_{24}N_2S$	2815	$CH_3(CH_2)_7NHCH_2CH_2SH$	1	50	0			124

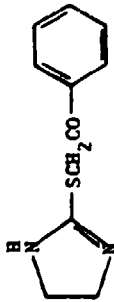
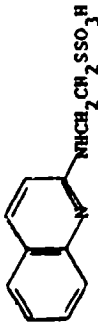
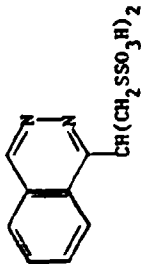
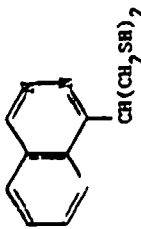
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{24}N_2SS_1$	33775			36 0				244
$C_{10}H_{24}N_2S_2$	1877	$HSCH_2CH_2N(C_2H_5)CH_2CH_2N(C_2F_5)CH_2CH_2SH$	2	33 0				303
$C_{10}H_{24}N_2S_2$	2317	$HSCH_2CH_2NH(CH_2)_6NHCH_2CH_2SH$	2	50 0				211
$C_{10}H_{24}N_2S_4$	1876	$(HSCH_2CH_2)_2NCH_2CH_2N(CH_2CH_2SH)_2$	2	25 0				303
$C_{10}H_{24}N_3PS_3$	1814			250 0				186
$C_{10}H_{24}N_6O_5S_2$	2869		4	3 0(T) 0				296
$C_{10}H_{24}N_6O_4S_2$	2985	$[H_2N(BN-)CNHC(CH_2OH)_2CH_2S-]_2$	1	600 ± 0				107

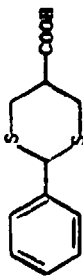
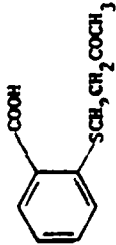
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₀ H ₂₅ NOSS1	76734	(CH ₃) ₃ Si(CH ₂) ₃ OCH ₂ CH ₂ NHCH ₂ CH ₂ SH		200	0(T),0			244
C ₁₀ H ₂₅ NOSS1	113260	(C ₂ H ₅) ₃ SiOCH ₂ CH ₂ NHCH ₂ CH ₂ SH		200	0(T),0			244
C ₁₀ H ₂₅ NO ₄ P ₂ S ₃	2099	(C ₂ H ₅ O) ₂ P(S)NHCH ₂ CH ₂ SP(S)(OC ₂ H ₅) ₂		187	0			186
C ₁₀ H ₂₅ NO ₄ S ₂ S1	76742	(CH ₃) ₃ Si(CH ₂) ₃ OCH ₂ CH ₂ NHCH ₂ CH ₂ SSO ₃ H		80	+(T),0			244
C ₁₀ H ₂₅ N ₃ S	2363	H ₂ N(CH ₂) ₆ NHCH ₂ CH ₂ NHCH ₂ CH ₂ SR	3	25	0			211
C ₁₀ H ₂₅ N ₃ S ₂	136217	HN(CH ₂ CH ₂ CH ₂ NHCH ₂ CH ₂ SR) ₂	3	15	0	300	0	188
C ₁₀ H ₂₆ N ₄ O ₆ P ₂ S ₂	3696	H ₂ O ₃ PSCH ₂ CH ₂ NH(CH ₂) ₆ NHCH ₂ CH ₂ SPO ₃ H ₂	50.58	25	0			205
C ₁₀ H ₂₆ N ₄ O ₆ P ₂ S ₂	108510	H ₂ O ₃ PS(CH ₂) ₃ NH(CH ₂) ₄ NH(CH ₂) ₃ SPO ₃ H ₂	42	50	0(T),0			270
C ₁₀ H ₂₆ N ₄ O ₆ P ₂ S ₂	176543	H ₂ O ₃ PSCH ₂ CH(OH)CH ₂ NH(CH ₂) ₄ NHCH ₂ CH(OH)CH ₂ SPO ₃ H ₂	42.58	100	0	1000	0	61
C ₁₀ H ₂₆ N ₄ O ₆ P ₂ S ₂	4259	H ₂ O ₃ PSCH ₂ CH ₂ NHCH ₂ [CH(OH)] ₄ CH ₂ NHCH ₂ CH ₂ SPO ₃ H ₂ (D-mannitol configuration)	58	80	0			111

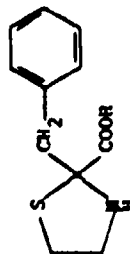
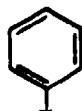
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{10}H_{26}N_3P_3S_3$	1973	$(CF_3CH_2CH_2)_2NP(S)(NHCH_2CH_2SH)_2$		100	0			186
$C_{10}H_{26}N_4S_2$	33278	$H_2N(CH_2)_3NHCH_2CH_2SSCH_2CH_2NH(CH_2)_3NH_2$	14, 42	70	$\pm$, 0	500	0	5
$C_{10}H_{26}N_5S_3$	157091	$H_2N(CH_2)_3NHCH_2CH_2SSSCH_2CH_2NH(CH_2)_3NH_2$	1, 77	90	$\pm$, 0			19
$C_{10}H_{26}N_5S_2$	2373	$[(CH_3)_2NNHC(=NH)NHCH_2CH_2S-]_2$	7	25	0			19
$C_{10}H_{27}N_3O_6P_2S_2$	149848	$H_2O_3PSCCH_2CH_2NH(CH_2)_3NH(CH_2)_3NHCH_2CH_2SPO_3H_2$	44, 57	50	0			188
$C_{11}H_8F_{15}NOS$	2326	$CF_3(CF_2)_6CONHCH_2CH(CH_3)SH$		1000	0			179
$C_{11}H_9ClN_2S$	871		6	20	0			63
$C_{11}H_9N_3O_2S$	614			12.5	0			63

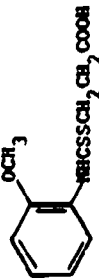
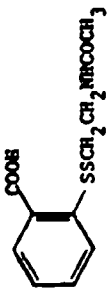
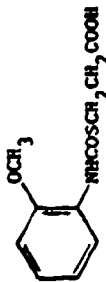
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Refer:
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_9N_3S$	1156			800	0			6
$C_{11}H_{10}NO_6PS$	180148		58	200	1.0			61
$C_{11}H_{10}N_2S$	391		1	20	0			63

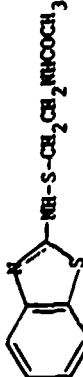
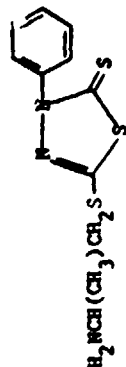
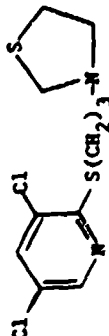
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{11}O_2S_2$	1556			105	0			61
$C_{11}H_{11}NO_3S$	95565			40	0			65
$C_{11}H_{11}N_3O_2S$	645		6	50	0			63
$C_{11}H_{11}N_3S$	752		6	25	0			76

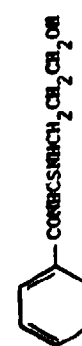
Molecular Formula	WP Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{12}N_2OS$	1051			44	0			83
$C_{11}H_{12}N_2O_3S_2$	3684			325	0(T), 0			56, 242
$C_{11}H_{12}N_2O_4S_4$	1174		58	300	0(T)			128
$C_{11}H_{12}N_2S_2$	1002		1	50	0			28

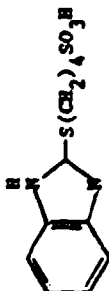
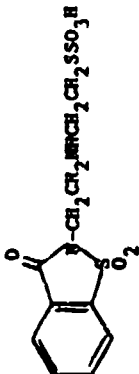
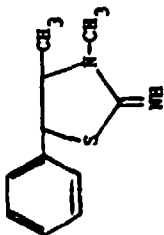
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{12}O_2S_2$	121449			400	0			244
$C_{11}H_{12}O_3S$	196			200	0			217
$C_{11}H_{13}NOS_2$	183329		27	80	±	300	0	70
$C_{11}H_{13}NOS_3$	27739			100	0			173

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{13}NO_2S$	125150			200	0			305
$C_{11}H_{13}NO_2S$	193690	$H_2NCH_2CH_2SC(COOH)=CH-C_6H_5$ 		300	0	200	0	120
$C_{11}H_{13}NO_2S_2$	3584	$CH_3CONHCH_2CH_2SSC(O)-C_6H_5$ 		25	0			173
$C_{11}H_{13}NO_2S_2$	105442	$H_2NCH_2CH_2SSC(COOH)=CH-C_6H_5$ 		100	0			246
$C_{11}H_{13}NO_3S$	696			500	0(T), 0			304

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{13}NO_3S_2$	1534			80	0			64
$C_{11}H_{13}NO_3S_2$	1670	$(HC \equiv CCH_2)_3 N^+ CH_2 CH_2 SSO_3^-$		150	0			261
$C_{11}H_{13}NO_3S_2$	1968			200	0			276
$C_{11}H_{13}NO_3S_3$	6373			250	0			117
$C_{11}H_{13}NO_4S$	2069			333	±0			64

Molecular Formula	MR Number	Structure	Salt Form	Antirradiation Activity				Referent
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{13}N_3OS$	147007			200 $\pm$ 0		800 $\pm$ 0		260
$C_{11}H_{13}N_3OS_2$	122167			90 0				260
$C_{11}H_{13}N_3O_5S_2$	142074			600 0				306
$C_{11}H_{13}N_3S_3$	189174		27, 77	30 0		300 0 (T), 0 (T)		70
$C_{11}H_{14}Cl_2N_3S_2$	136768		1	100 0		500 0		43, 298

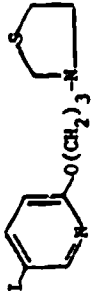
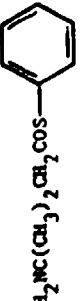
Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{14}N_2O_2S$	81864			600	0			59
$C_{11}H_{14}N_2O_2S$	150243			300	0			238
$C_{11}H_{14}N_2O_2S$	180038			300	0			89
$C_{11}H_{14}N_2O_2S_2$	2090			1200	+			146
$C_{11}H_{14}N_2O_3S$	9840			200	0			232
$C_{11}H_{14}N_2O_3S_2$	3291			200	0			159

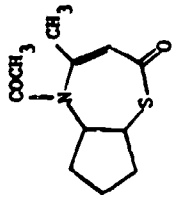
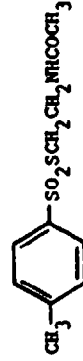
Molecular Formula	UR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{14}N_2O_3S_2$	6375			500	0			117
$C_{11}H_{14}N_2O_3S_2$	27388			75	0			165
$C_{11}H_{14}N_2O_3S_3$	125694			400	0			306
$C_{11}H_{14}N_2S$	989		1	1.4	0			250

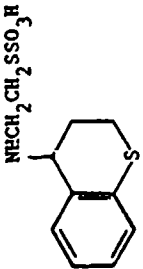
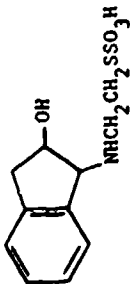
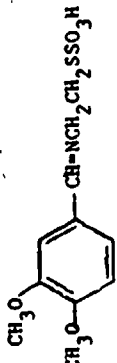
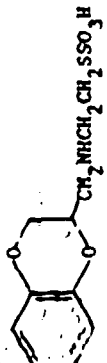
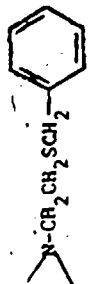
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{14}N_2S_3$	790			400	+(T)			216
$C_{11}H_{14}N_4O_5S_2$	67833		1	64	+ ±	600	0(T)	275
$C_{11}H_{14}N_4S$	79337		2	40	+ ±, 0	300	+(T)	13
$C_{11}H_{14}OS_2$	123934			56	0			350

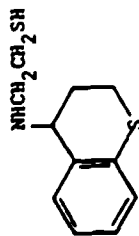
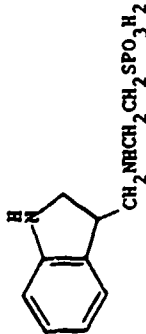
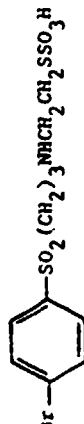
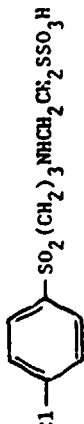
Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{15}ClN_2OS$	122962		1	60	0	300	+(T), 0	157,224
$C_{11}H_{15}ClN_2S_2$	132195		1	50	0	170	0	43,298

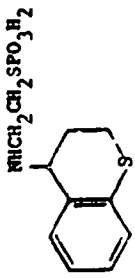
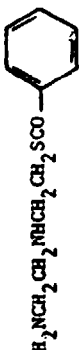
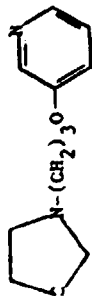
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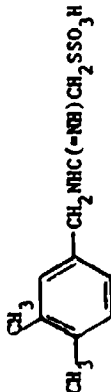
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{15}IN_2OS$	147954		1	80	0	600	± 0	43,224
$C_{11}H_{15}IN_2S_2$	157310		1	150	0	300	0	148,298
$C_{11}H_{15}NOS$	61128		27	560	$\pm(T), 0$			145,240
$C_{11}H_{15}NOS_2$	821			100	0			201
$C_{11}H_{15}NOS_2$	102266		27	80	± 0			54,240

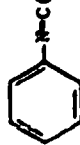
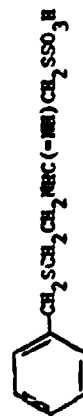
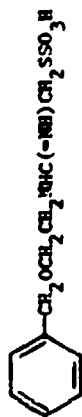
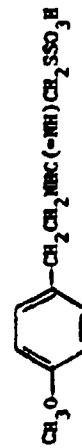
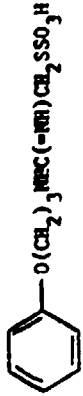
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{15}NO_3S$	158925	$H_2NC(CH_3)_2CH_2S-S-CO-$ 	1	40 0		600 0		19
$C_{11}H_{15}NO_2S$	2448			250 0				152
$C_{11}H_{15}NO_3S$	186680	$H_2NC(CH_3)_2CH_2SC(COOH)=CH-$ 		150 0(T), 0				70
$C_{11}H_{15}NO_3S_2$	1871			25 0				80

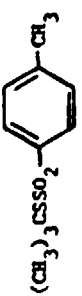
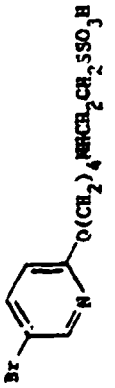
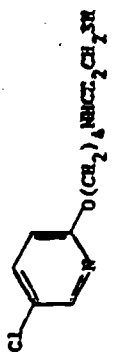
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{15}NO_3S_3$	121230			60 0				223
$C_{11}H_{15}NO_4S_2$	54558			200 0				145, 242
$C_{11}H_{15}NO_5S_2$	3361		57	600 $\pm$ 0				11
$C_{11}H_{15}NO_5S_2$	3153			10 0				59
$C_{11}H_{15}NS$	3154			150 0				12

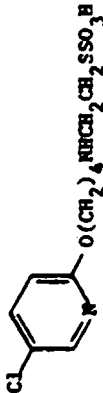
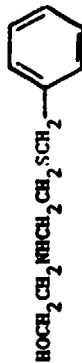
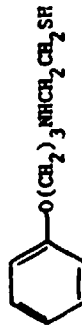
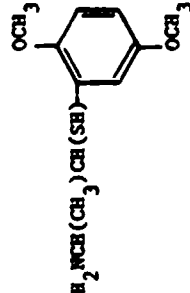
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{15}NS_2$	121229		6	80	0			223
$C_{11}H_{15}N_2O_3PS$	32065			50	0			165,243
$C_{11}H_{15}N_4O_3PS$	79336			60	+(T), ±	400	0(T)	13
$C_{11}H_{16}SrNO_5S_3$	7472			100	0			183
$C_{11}H_{16}ClNO_5S_3$	8310			200	0			183

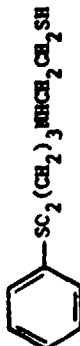
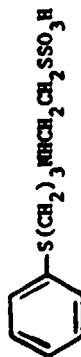
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{16}ClNO_5S_3$	25416			200	+ (T) .0			307
$C_{11}H_{16}NO_3PS_7$	114390		57	200	0			223
$C_{11}H_{16}N_2OS$	61129		24	40	0			145
$C_{11}H_{16}N_2OS$	117935		2	75	0	200	0	157
$C_{11}H_{16}N_2OS$	180037			200	+ .0			89

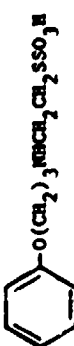
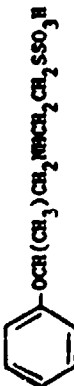
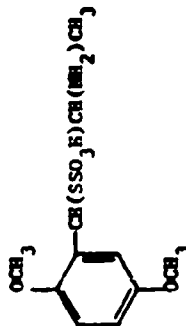
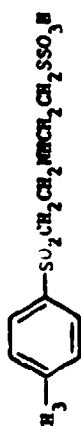
Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{16}N_2O_5S_2$	177664		1	100	+0	400	+(T), 0	71
$C_{11}H_{16}N_2O_5S$	150244			600	+0			238
$C_{11}H_{16}N_2O_5S_2$	2707			12.5	0			37
$C_{11}H_{16}N_2O_5S_2$	60238			20	0	100	0	98,299
$C_{11}H_{16}N_2O_5S_2$	114388			60	0			308
$C_{11}H_{16}N_2O_5S_2$	2634			100	0			297

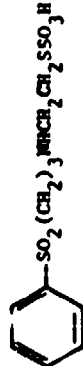
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{16}N_2O_3S_3$	2804			200 0				297
$C_{11}H_{16}N_2O_3S_3$	8317			20 +, 0		80 ±		98, 299
$C_{11}H_{16}N_2O_3S_3$	32379			30 +, +, ±, 0		80 +		98, 299
$C_{11}H_{16}N_2O_4S_2$	8316			40 +, +, 0		50 0		299
$C_{11}H_{16}N_2O_4S_2$	41266			28 +, ±		300 0(T), 0(T), 0		98, 299
$C_{11}H_{16}N_2O_4S_2$	146092			30 +, +, 0		100 0(T)		98, 299

Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Referen:
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{16}N_2S_2$	1824			150	+, ±	300	0	20
$C_{11}H_{16}O_2S_2$	3036			250	0(T), 0			309
$C_{11}H_{17}BrN_2OS$	106155		1	50	0			224
$C_{11}H_{17}BrN_2O_4S_2$	104695			100	+, +, 0	500	0	224
$C_{11}H_{17}ClN_2OS$	111485		1	35	0	100	0	224

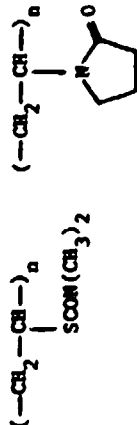
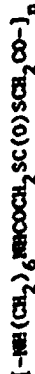
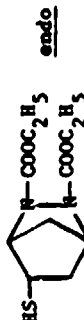
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{17}ClN_2O_4S_2$	108504			100	+, +, 0	600	0(T), 0	224
$C_{11}H_{17}NOS$	881		1	105	0			103, 104, 231
$C_{11}H_{17}NOS$	2466		1	50	0			224
$C_{11}H_{17}NOS$	3583			50	+, 0			307
$C_{11}H_{17}NO_2S$	1992		1	40	0			99

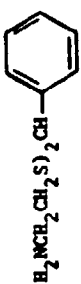
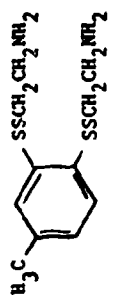
Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{17}NO_2S$	2467		1	50	0			124,209
$C_{11}H_{17}NO_2S_2$	51988		1	80	0			268
$C_{11}H_{17}NO_3S_2$	2229			50	±.0	400	0	161
$C_{11}H_{17}NO_3S_2$	3548			100	0			56,242
$C_{11}H_{17}NO_3S_2$	3549			100	0			56,242
$C_{11}H_{17}NO_3S_2$	5146			75	±.0			268

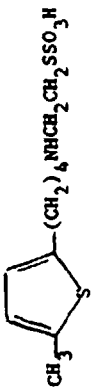
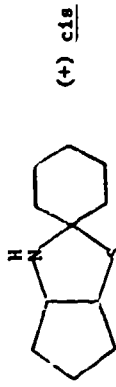
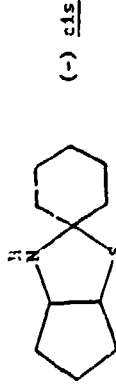
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{17}NO_3S_3$	27658			75	0			144
$C_{11}H_{17}NO_4S_2$	3237			50	0			226
$C_{11}H_{17}NO_4S_2$	5332			50	0			181
$C_{11}H_{17}NO_5S_2$	1258		45	100	0			99
$C_{11}H_{17}NO_5S_3$	6347			300	$\pm(T)$			183

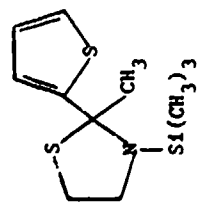
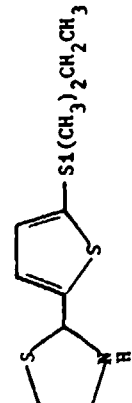
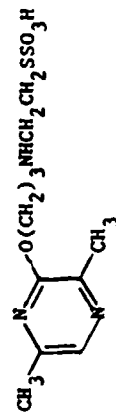
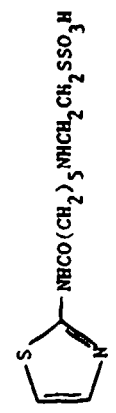
Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{11}H_{17}NO_5S_3$	8367			150	0			268
$C_{11}H_{17}NO_5S_3$	25417			200	0			307
$C_{11}H_{17}NS$	2298		1	25	0			124,195
$C_{11}H_{17}NS$	2299		1	25	0			124
$C_{11}H_{17}NS$	2308		1	50	0			124
$C_{11}H_{17}NS_2$	2687		1	50	0			87

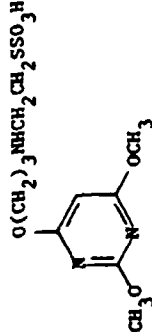
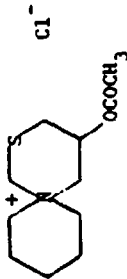
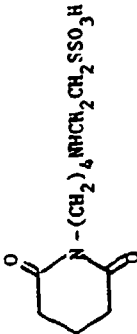
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Referred
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{17}NS_2$	6369		1	50 0				268
$C_{11}H_{17}N_3O_3S_2$	2916		6	600 0				297
$C_{11}H_{18}BrNO_3S_2S_1$	132922			20 0				244
$C_{11}H_{18}ClNO_3S_2S_1$	133635			50 +,-		600 0		244
$C_{11}H_{18}NO_3PS_2$	6370		57	100 0				268
$C_{11}H_{18}NO_4PS$	5143		57	46 0				268

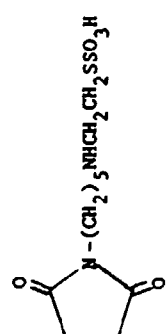
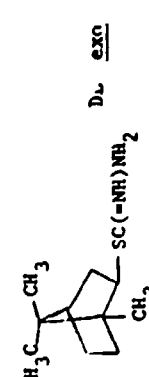
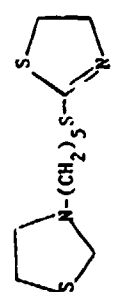
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{18}NO_5PS$	9723		47.53	100	0			248
$C_{11}H_{18}N_2O_5S$	1480			1050	0			35
$C_{11}H_{18}N_2O_5S_2$	896			800	0			35
$C_{11}H_{18}N_2O_5S_2$	3280			200	0(T), 0			169
$C_{11}H_{18}N_2O_5S_2$	9462		1	100	0(T), 0			310
$C_{11}H_{18}N_2O_4S$	2212			150	0			212

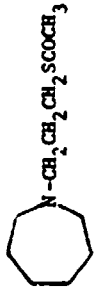
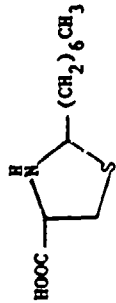
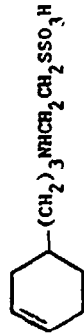
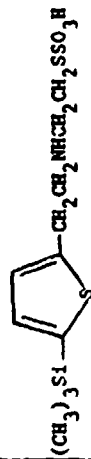
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{18}N_2O_2S_2$	177665	$[CH_3CONHCH_2CH_2SC(O)-]_2CH_2$		500 $\pm$.0		1000 $\pm$ (T).0		71
$C_{11}H_{16}N_2S$	2814		1	100 0				124
$C_{11}H_{18}N_2S$	150634		6	15 0		40 0		300, 311
$C_{11}H_{18}N_2S_2$	76062		2	56 0				66
$C_{11}H_{16}N_2S_3$	91490		1.42	60 0		200 0		92
$C_{11}H_{16}N_2S_4$	2409		2	250 0(T).0				208

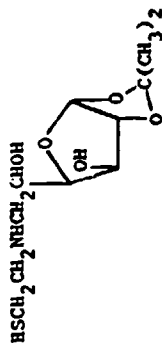
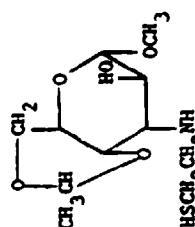
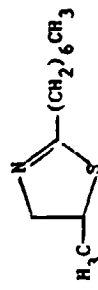
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{18}N_3O_3PS$	54550			50	0(T),0			145,243
$C_{11}H_{18}N_4S_2$	90205		8	10	0			268
$C_{11}H_{19}NO_3S_3$	4758			1000	0			295
$C_{11}H_{19}NS$	5041		1	560	0(T),0			152
$C_{11}H_{19}NS$	5045		1	560	0,±			152

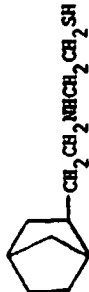
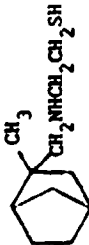
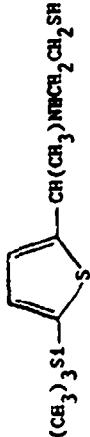
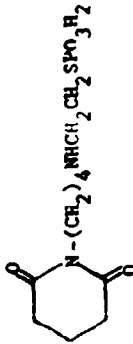
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{11}H_{19}NS_2S_1$	33583			360	0(T), 0(T)			292
$C_{11}H_{19}NS_2S_1$	39066			200	0			292
$C_{11}H_{19}N_3O_4S_2$	71463			100	0			92
$C_{11}H_{17}N_3O_4S_3$	36161			100	0(T), 0			144

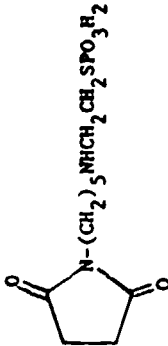
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Hg/Kg	Rating	Dose Hg/Kg	Rating	
$C_{11}H_{19}N_3O_6S_2$	75236			180	0			92
$C_{11}H_{19}N_3S$	159567		3	40	0	300	0(T), 0	206
$C_{11}H_{20}ClNO_2S$	3620	 Cl ⁻		25	0			12
$C_{11}H_{20}N_2O_5S_2$	104724			100	0(T), 0			256

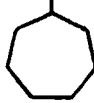
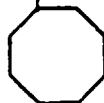
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{20}N_2O_5S_2$	170443			75 0		500 0		206
$C_{11}H_{20}N_2S$	199788		27	15 0		80 0		120
$C_{11}H_{20}N_2S_3$	91492		2	60 0				6
$C_{11}H_{20}N_3O_3PS$	156794		45	90 $\pm$ 0		300 0		188

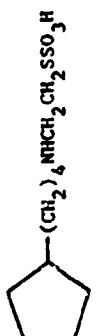
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{11}H_{21}NOS$	1058		1	20	0			231
$C_{11}H_{21}NO_2S$	2105			400	0			26
$C_{11}H_{21}NO_3S$	1062	$CH_3OOCCH(C_2H_5)CH_2NHCH_2CH_2CH_2SClCH_3$	1	200	0			231
$C_{11}H_{21}NO_3S_2$	4535			40	0			226, 293
$C_{11}H_{21}NO_3S_3$	53374			100	0			244

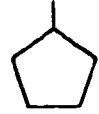
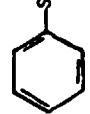
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				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{21}NO_5S$	551			200	0			194
$C_{11}H_{21}NO_5S$	1714		1	150	0			194
$C_{11}H_{21}NO_5S_2$	5020			200	0			56,242
$C_{11}H_{21}NS$	2128			100	0			27

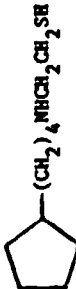
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{21}NS$	3153	$CH_3(CH_2)_8CH_2NCS$		1200	0			3
$C_{11}H_{21}NS$	3155			30	0			12
$C_{11}H_{21}NS$	3156			125	0			12
$C_{11}H_{21}NS_2S_1$	33585			64	0			292
$C_{11}H_{21}N_2O_3PS$	148663		42	60	0			256

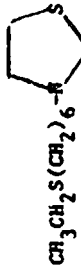
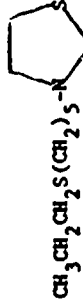
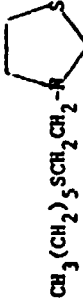
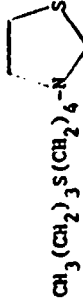
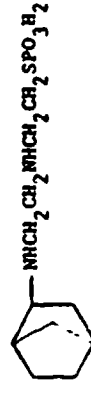
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{21}N_2O_5PS$	172689		42	75	0	500	0(T), 0(T), 0	206
$C_{11}H_{22}NO_5PS$	5819			400	0			56,243
$C_{11}H_{22}N_2O_2S$	2697			400	0			212
$C_{11}H_{22}N_2O_2S_2$	2104	$(C_2H_5)_2N(CH_2)_3NHCSSCH_2CH_2COOH$	42	800	0			64
$C_{11}H_{22}N_2O_2S_4$	2376	$(H_2NCH_2CH_2SCOSCH_2CH_2)_2CH_2$	2	60	0			135
$C_{11}H_{22}N_2O_3S_2$	9575			7	+(T), 0	30	+, 0	98,299

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{22}N_2O_3S_2$	166828			10 $\pm$,0		20 $\pm$,0		98,299
$C_{11}H_{22}N_2O_3S_2$	166829			10 $+(T), \pm$,0		100 (T), $\pm$,0		98,299
$C_{11}H_{22}N_2O_4S_2$	95571	$(CH_3CH_2OCO)_2C(SCH_2CH_2NH_2)_2$	2	150 $\pm$,0		600 +		65
$C_{11}H_{22}N_2O_4S_3$	158924	$(H_2NCOOCH_2CH_2NHCH_2CH_2S^-)_2CS$	27	300 $\pm$,0		1000 0		19
$C_{11}H_{23}NOS$	2073	$CH_3(CH_2)_6CONHCH_2CH(SH)CH_3$		250 0				27
$C_{11}H_{23}NOS$	2803	$CH_3(CH_2)_7ON=C(CH_3)CH_2SH$		100 0				132
$C_{11}H_{23}NOS$	3022		1	40 0				124

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{23}NO_2S$	2292	$CH_3(CH_2)_7NHCH(COOH)CH_2SH$		1000	0(T), ±	1500	0	39
$C_{11}H_{23}NO_3S_2$	2942			100	+(T), ±, 0	800	0(T)	226, 293
$C_{11}H_{23}NO_3S_2$	3341			75	±, ±, 0	500	±	226, 293
$C_{11}H_{23}NO_3S_2$	3613			50	±, 0			226, 293
$C_{11}H_{23}NO_3S_2$	6135			50	±, ±, 0	30	±	226, 293
$C_{11}H_{23}NO_3S_2$				50	±, 0			226, 293

Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{23}NO_3S_2$	8315			50	±, ±			226, 293
$C_{11}H_{23}NO_4S_2$	3069			50	0			226
$C_{11}H_{23}NO_4S_2$	3605	$CH_3(CH_2)_7N(COOH)CH_2CH_2SSO_3H$	57	200	0			111
$C_{11}H_{23}NO_4S_2$	4111			75	0			286, 295
$C_{11}H_{23}NO_5S_3$	7982			200	0			183
$C_{11}H_{23}NS$	2949		1	50	+, +	300	+, +, ±	312

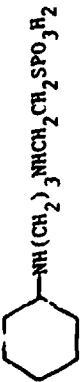
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₁ H ₂₃ NS	31894		1	25	0			324
C ₁₁ H ₂₃ NS 253	31896		1	40	+0			324

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{23}NS_2$	152922		1	100 0		300 0		298
$C_{11}H_{23}NS_2$	156714		1	75 0		300 0(T), 0		298
$C_{11}H_{23}NS_2$	157843		1	125 $\pm$ (T), $\pm$		300 $\pm$ (T), $\pm$		298
$C_{11}H_{23}NS_2$	166826		1	125 0		300 $\pm$, 0		148
$C_{11}H_{23}N_2O_3PS$	81856		42	20 0(T), 0(T)				145, 243
$C_{11}H_{23}N_2O_3PS$	166827		57	25 $\pm$ (T), $\pm$, 0		45 $\pm$ (T), $\pm$		98, 299

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{24}NO_4PS$	26125			50	0			321
$C_{11}H_{24}N_2OS$	2240	$CH_3(CH_2)_7NHCONHCH_2CH_2SH$		50	0			16
$C_{11}H_{24}N_2OS$	53470		2	60	0			108, 313
$C_{11}H_{24}N_2O_3S_2$	2706	$CH_3(CH_2)_8NHC(=NH)CH_2SSO_3H$		2.5	0			37
$C_{11}H_{24}N_2O_3S_2$	4432			150	0			111, 169
$C_{11}H_{24}N_2S$	2216			500	0			99, 160

Molecular Formula	WR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{24}N_2S$	2300		2	25 0				124
$C_{11}H_{24}N_2S$	3149	$CH_3(CH_2)_9SC(=NH)NH_2$	6	20 0				12
$C_{11}H_{24}N_2S$	3152	$CH_3(CH_2)_9NHCSNH_2$		150 0				12
$C_{11}H_{24}N_2S$	4115		2	100 0(T), 0				111
$C_{11}H_{24}N_2S$	34408		2	50 0				313
$C_{11}H_{24}N_2S_2$	162860	$CH_3(CH_2)_9SSC(=NH)NH_2$	1	20 $\pm$, 0		600 0		11

Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{24}N_4O_5$	114397		8	2 0				62
$C_{11}H_{24}N_4O_5S_2$	29672	$(CH_3)_3CNHCNHCN=C(CH_3)CH_2CH_2NHCH_2CH_2SSO_3H$		200 $\pm$ 0				165, 242
$C_{11}H_{25}NOS$	1520	$(CH_3)_2CHCH_2OCH_2C(CH_3)_2CH_2NHCH_2CH_2SH$		50 0 (T)				12
$C_{11}H_{25}NO_2S$	2575	$CH_3(CH_2)_3OCH_2CH_2O(CH_2)_3NHCH_2CH_2SH$	1	50 0				124
$C_{11}H_{25}NO_3S$	25871	$HOCH_2CH(OH)CH_2O(CH_2)_6NHCH_2CH_2SH$	1	150 0				121
$C_{11}H_{25}NO_3S_2$	1472	$CH_3(CH_2)_7CH(CH_2NH_2)CH_2SSO_3H$		150 0				162
$C_{11}H_{25}NO_3S_2$	1818	$CH_3(CH_2)_8NHCH_2CH_2SSO_3H$		15 $\pm$ 5	+(T), $\pm$	800	+(T)	161, 181, 239
$C_{11}H_{25}NO_3S_2$	2077	$(CH_3)_2CH(CH_2)_6NHCH_2CH_2SSO_3H$		40 $\pm$ 0				161, 181, 239
$C_{11}H_{25}NO_3S_2$	2386	$CH_3(CH_2)_4CH(CH_2CH_2CH_3)NHCH_2CH_2SSO_3H$		75 $\pm$ 5				161, 181, 239

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{25}NO_3S_2$	2658	$HOCH_2CH_2OCH_2CH_2O(CH_2)_3NHCH_2CH_2SCH_2CH_2SH$		100 0				12
$C_{11}H_{25}NO_3S_2$	2709	$CH_3(CH_2)_6CH(CH_3)NHCH_2CH_2SSO_3H$		45 $\pm(T), \pm 0$		800 $\pm$		161,181,239
$C_{11}H_{25}NO_3S_2$	2926	$CH_3(CH_2)_5CH(C_2H_5)NHCH_2CH_2SSO_3H$		50 ± 0				161,181
$C_{11}H_{25}NO_3S_2$	9528	$(CH_3)_3CCH_2CH(CH_3)CH_2CH_2NHCH_2CH_2SSO_3H$		20 0				181,239
$C_{11}H_{25}NO_4S_2$	2908	$HO(CH_2)_9NHCH_2CH_2SSO_3H$		200 ± 0				226
$C_{11}H_{25}NO_4S_2$	3070	$CH_3O(CH_2)_8NHCH_2CH_2SSO_3H$		75 ± 0				226
$C_{11}H_{25}NO_4S_2$	152911	$CH_3(CH_2)_7NHCH_2CHOHCH_2SSO_3H$		50 $\pm(T), \pm 0$		400 $\pm(T), 0$		58
$C_{11}H_{25}NS$	1514	$CH_3(CH_2)_7NHCH_2CH(CH_3)SH$		30 0				12
$C_{11}H_{25}NS$	1547	$CH_3(CH_2)_8NHCH_2CH_2SH$	1	25 $\pm$		200 0		102
$C_{11}H_{25}NS$	2301	$I(CH_3)_2CHCH_2)_2CHNHCH_2CH_2SH$	1	40 0				124
$C_{11}H_{25}N_2O_3PS$	70039			160 0				145,243

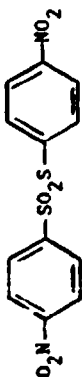
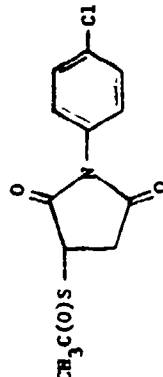
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{25}N_3O_3S_2$	4437	$CH_3(CH_2)_7NCH_2CH_2SSO_3H$ $C(=NH)NH_2$		32	0			315
$C_{11}H_{25}N_3S$	1604	$CH_3(CH_2)_7NHCH_2CH_2SC(=NH)NH_2$	7	30	0			314, 315
$C_{11}H_{25}N_3S$	1605	$CH_3(CH_2)_5CH(CH_3)NHCH_2CH_2SC(=NH)NH_2$	7	50	0			11
$C_{11}H_{25}N_3S$	1835	$CH_3(CH_2)_3NHC[-N(CH_2)_3CH_3]SCH_2CH_2NH_2$	7	20	0			26
$C_{11}H_{25}N_3S$	2569	$H_2NC(=NH)N(CH_2CH_2SH)(CH_2)_7CH_3$	24	25	0			314, 315
$C_{11}H_{25}N_3S$	4443	$CH_3(CH_2)_3CH(CH_2)_3CH_2NHCH_2CH_2SC(=NH)NH_2$	7	32	0			315
$C_{11}H_{25}N_4O_4PS$	28669	$(CH_3)_3CNHCONHN=C(CH_3)CH_2CH_2NHCH_2CH_2SPO_3H_2$		50	0			20

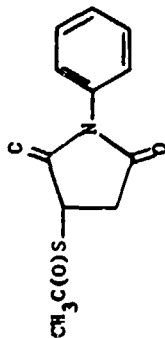
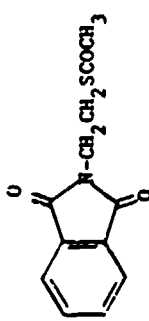
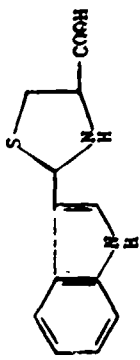
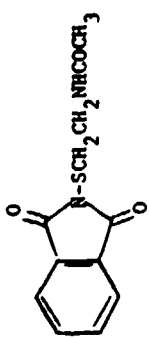
IR Number	Structure	Salt Form	Antiradiation Activity				Reference
			I.P.		P.O.		
			Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{26}NO_4PS$	$(CH_3)_3C^+i_2C^-(CH_3)CH(OH)CH_2NHCH_2CH_2SPO_3H_2$		80	+, +, 0	80	+, 0	314, 315
$C_{11}H_{26}NO_4PS$	$CH_3(CH_2)_7NHCH_2CHOHCH_2SiO_3H_2$	54	50	+, +	150	0	165, 243
$C_{11}H_{26}NO_5PS$	$CH_3(CH_2)_4CH(OT)CH_2CH(OH)CH_2NHCH_2CH_2SPO_3H_2$		1000	0			313
$C_{11}H_{26}N_2OS$	$(C_2H_5)_2NCH_2CH_2OCH_2CH_2CH_2NHCH_2CH_2SH$	1	15	0			124
$C_{11}H_{26}N_2O_3S_2$	$(CH_3)_3CNH(CH_2)_3NHC(CH_3)_2CH_2SSO_3H$		200	0			54
$C_{11}H_{26}N_2O_6S_4$	$HO_3SSCH_2C(CH_3)_2NH(CH_2)_3NHC(CH_3)_2CH_2SSO_3H$	42	100	0			109

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{26}N_2O_6S_4$	51984	$HO_3SSCH_2CH_2NH(CH_2)_7NHCH_2CH_2SSO_3H$		80	0(T) 0			116
$C_{11}H_{26}N_2O_6S_4$	92971	$HO_3SSCH_2CH_2CH_2NH(CH_2)_5NHCH_2CH_2CH_2SSO_3H$		40	0			270
$C_{11}H_{26}N_2S$	1057	$(C_2H_5)_2N(CH_2)_3CH(CH_3)NHCH_2CH_2SH$	1	50	0			102
$C_{11}H_{26}N_2S$	1731	$H_2N(CH_2)_9NHCH_2CH_2SH$	2	100	0			207
$C_{11}H_{26}N_2S$	2309	$(CH_3CH_2CH_2)_2N(CH_2)_3NR^1CH_2CH_2SH$	2	100	0			124
$C_{11}H_{26}N_2S_2$	2497	$HSCH_2CH_2NH(CH_2)_7NHCH_2CH_2SH$	2	50	0			211
$C_{11}H_{26}N_3O_4PS$	70035			280	0			145,243
$C_{11}H_{26}N_3O_4PS$	74178	$CH_3CONH(CH_2)_4NH(CH_2)_3NHCH_2CH_2SPO_3H_2$	42	160	0			288
$C_{11}H_{26}N_4O_3S_2$	9055	$(CH_3)_2CHNHC(=NCH(CH_3)_2)NHCH_2CH_2NHCH_2CH_2SSO_3H$		50	0			165,242
$C_{11}H_{27}NO_2S_2$	2501	$(C_2H_5O)_2Si(CH_3)(CH_2)_4NHCH_2CH_2SH$		100	0			12

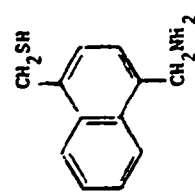
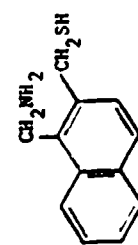
Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{27}NO_3SS1$	2502	$(C_2H_5O)_3Si(CH_2)_3NHCH_2CH_2SH$		75 0				234
$C_{11}H_{27}N_2O_3PS$	70040	$CH_3(CH_2)_5NH(CH_2)_3NHCH_2CH_2SPO_3H_2$	42	180 0				145,243
$C_{11}H_{27}N_2O_3PS$	125050	$(CH_3)_3CNH(CH_2)_3NHC(CH_3)_2CH_2SPO_3H_2$	42	250 4,+0		500 0		1
$C_{11}H_{27}N_2O_3PS$	159568	$(C_2H_5)_2N(CH_2)_3CH(CH_3)NHCH_2CH_2SPO_3H_2$	42	50 4,0				154
$C_{11}H_{27}N_2O_3PS$	184192	$(C_2H_5)_2N(CH_2)_5NHCH_2CH_2SPO_3H_2$	44,52	20 0		150 T,0(T)		126
$C_{11}H_{27}N_4O_3PS$	29668	$(CH_3)_2CHNHC(=NCH(CH_3)_2)NHCH_2CH_2NHCH_2CH_2SPO_3H_2$		60 0				165,243
$C_{11}H_{27}N_4O_3PS$	80409			60 0				145,243

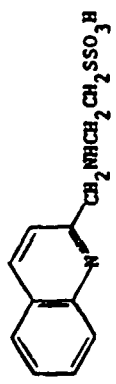
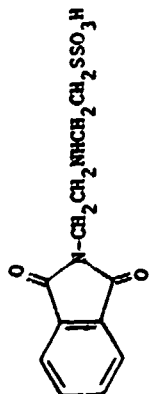
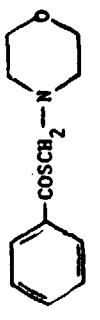
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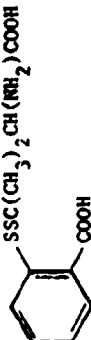
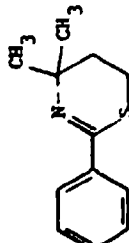
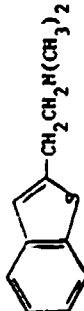
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{11}H_{28}N_2O_5SSi$	38947	$(CH_3O)_2Si(CH_3)CH_2CH(CH_3)CH_2NHCH_2CH_2NHCH_2CH_2SH$		12.5	0			244
$C_{11}H_{28}N_2O_6P_2S_2$	62941	$H_2O_3PSCH_2CH_2NH(CH_2)_3NHCH_2CH_2SPO_3H_2$	54	56	0			270
$C_{11}H_{28}N_2O_6P_2S_2$	104733	$H_2C[CH_2CH_2NH(CH_2)_3SPO_3H_2]_2$		30	0(T),0			270
$C_{11}H_{28}N_4S_2$ 373	108506	$H_2C(CH_2NHCH_2CH_2NHCH_2CH_2SH)_2$	9	40	0			62
$C_{12}H_{18}N_2O_5S_2$:	2498			500	0(T),0			315,316
$C_{12}H_{10}ClNO_3S$	815			875	0(T)			266

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Kg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{11}NO_3S$	816			200	0			266
$C_{12}H_{11}NO_3S$	92968			200	0, ±			306
$C_{12}H_{12}N_2O_2S$	176358			200	0			318
$C_{12}H_{12}N_2O_3S$	105131			25	0			260

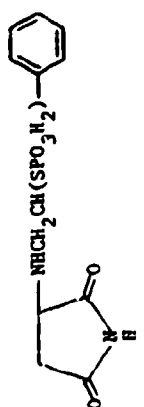
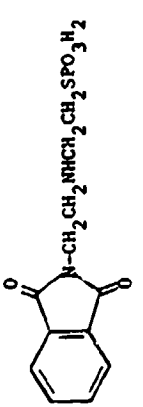
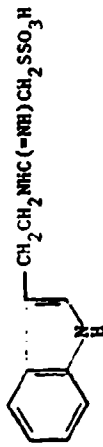
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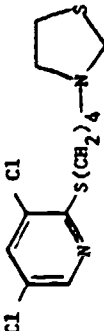
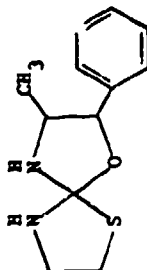
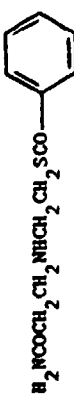
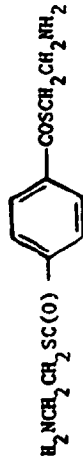
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{12}N_2S$	1556		6	40	0			63
$C_{12}H_{13}F_{12}NO_5S_2$	7457	$CHF_2(CF_2)_5CH_2OCOCH_2CH_2NHCH_2CH_2SSO_3H$		200	0			165, 242
$C_{12}H_{13}NS$	834		1	50	0			319, 320
$C_{12}H_{13}NS$	835		1	50	0			320

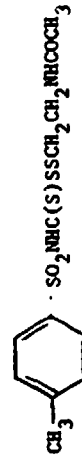
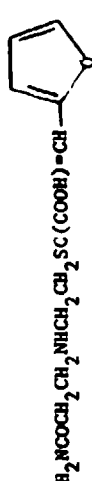
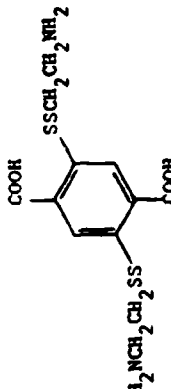
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{14}N_2O_5S_2$	176623			100	0(T), ±	100	0(T), 0	129
$C_{12}H_{14}N_2O_5S_2$	40339		42	1000	0			306
$C_{12}H_{15}NOS$	777			400	0			272
$C_{12}H_{15}NOS_2$	183369		27	70	0	300	0	70
$C_{12}H_{15}NO_2S$	5804			180	0			232

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{15}NO_2S_2$	8361			200	0			129
$C_{12}H_{15}NO_3Se$	808			60	0			321
$C_{12}H_{15}NO_4S_2$	146020			100	0			246
$C_{12}H_{15}NS$	2320		80	300	0			114
$C_{12}H_{15}NS$	2937		1	150	0(T), 0			63

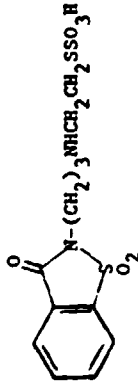
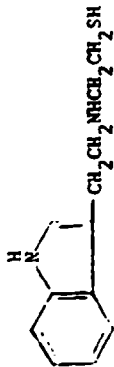
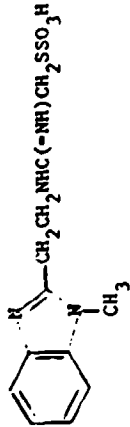
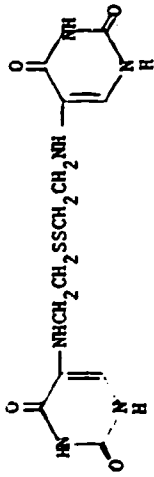
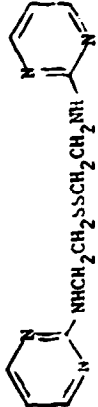
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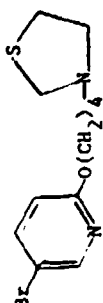
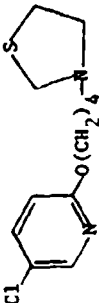
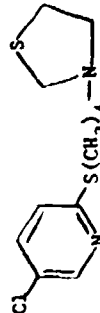
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{15}N_2O_5PS$	74129		77	560	± 0			145,243
$C_{12}H_{15}N_2O_5PS$	40340		48.57	400	± 0			306
$C_{12}H_{15}N_3O_5S_2$	2513			100	0(T), 0			14
$C_{12}H_{15}N_3O_5S_2$	33762			28	++, 0	500	0	189,299

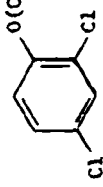
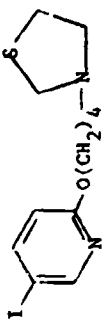
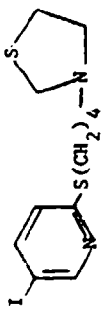
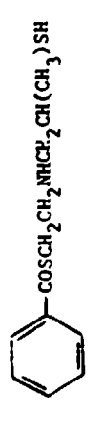
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{16}Cl_2N_2S_2$	159618			300	0			298
$C_{12}H_{16}N_2OS$	1722			50	0			41
$C_{12}H_{16}N_2OS_2$	2450			600	0			14
$C_{12}H_{16}N_2O_2S$	92984		27	400	$+, \pm$	500	0	54,240
$C_{12}H_{16}N_2O_2S_2$	175881		28	50	$0, \pm$	800	$+, 0$	71

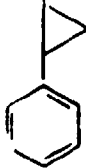
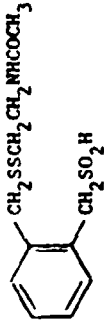
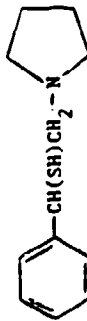
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{16}N_2O_2S_4$	175868		2	75	±.0	250	0	71
$C_{12}H_{16}N_2O_3S_3$	2602			200	0			297
$C_{12}H_{16}N_2O_3S_4$	27737		55	100	0			136
$C_{12}H_{16}N_2O_4S$	186678			600	0			70
$C_{12}H_{16}N_2O_4S_4$	145039		2	150	0(T).0	500	0	245

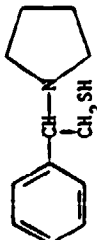
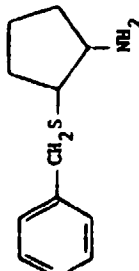
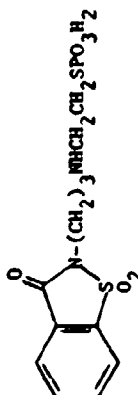
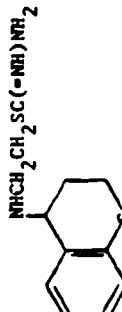
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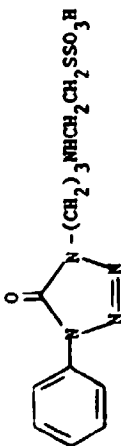
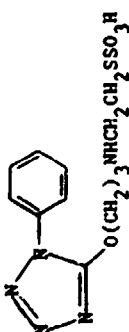
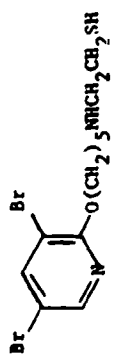
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{16}N_4O_5S_3$	125693			250	0			306
$C_{12}H_{16}N_2S$	2473		1	30	0			267
$C_{12}H_{16}N_4O_5S_2$	80783		1	100	0(T), 0			275
$C_{12}H_{16}N_4O_5S_2$	8C			300	0			252
$C_{12}H_{16}N_6S_2$	599			1000	0			170

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{16}N_2S_2$	176615			100	0	600	0	?
$C_{12}H_{17}BrN_2OS$	104703		1	100	+0	250	±	157,224
$C_{12}H_{17}BrN_2S_2$	159619		1	100	0	300	±	298
$C_{12}H_{17}ClN_2OS$	108505		1	120	+0	600	±, ±	157,224
$C_{12}H_{17}ClN_2S_2$	159574		1	100	0	100	±(T), 0	148,298

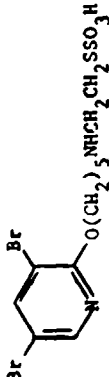
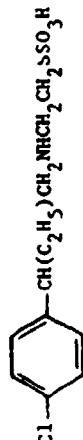
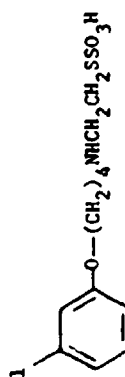
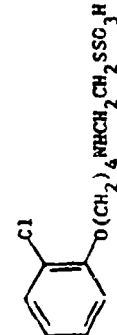
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{17}Cl_2NO_4S_2$	3122			25	$+_{-}$	2000	0(T), 0	192
$C_{12}H_{17}IN_2OS$	148743		1	100	$\pm, 0$	400	$+_{-} 0$	224
$C_{12}H_{17}IN_2S_2$	162862		1	125	$\pm, 0$	300	$\pm, 0$	298
$C_{12}H_{17}NOS$	5806		1	100	0			232
$C_{12}H_{17}NOS$	54551		27	80	$\pm, 0$			145, 240
$C_{12}H_{17}NOS_2$	94790		27	130	0_{-}			54, 240

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{17}NO_3S_2$	5980	 <u>trans</u>		50 0				726
$C_{12}H_{17}NO_3S_2$	29691			50 S,S				144,285
$C_{12}H_{17}NO_3S_3$	179442		57	300	+,+,+,+±	600	+±	322,323
$C_{12}H_{17}NO_4S_2$	33789			40 0				165,242
$C_{12}H_{17}NS$	316			60 0				99

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{17}NS$	770		1	60	0			99
$C_{12}H_{17}NS$	1828		1	80	0			152
$C_{12}H_{17}N_2O_6PS_2$	125692		57	20	0			306
$C_{12}H_{17}N_3S_2$	121228		7	30	0			223
$C_{12}H_{17}N_3O_3PS_2$	88895		42	150	0(T), 0			54, 243

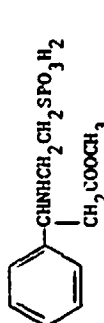
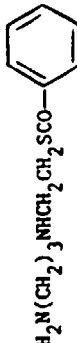
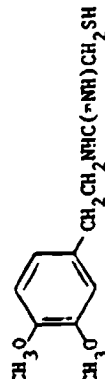
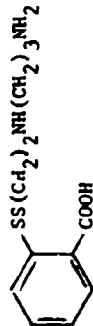
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{17}N_5O_4S_2$	127014			75	0			43
$C_{12}H_{17}N_5O_4S_2$	134786			10	0			43
$C_{12}H_{18}BrNO_3S_2$	71462			32	0			285
$C_{12}H_{18}BrNO_3S_2$	5981			50	0(T), 0(T)			294, 324
$C_{12}H_{18}Br_2N_2OS$	99588		1	80	0			224

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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{18}Br_2N_2O_4S_2$	99581			50	+, +, ±, 0	800	0	224
$C_{12}H_{18}ClNO_3S_2$	7468			75	+, 0	1600	0	226, 285
$C_{12}H_{18}ClNO_4S_2$	3819			100	+, +	1000	±	226, 294
$C_{12}H_{18}ClNO_4S_2$	4106			75	±(T), ±			226, 294
$C_{12}H_{18}ClNO_4S_2$	4792			50	+, ±	1000	0	226, 294

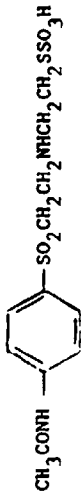
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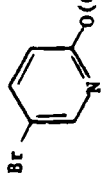
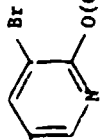
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{18}ClNO_4S_2$	8314			80	0(T),0			226
$C_{12}H_{18}ClNO_5S_3$	8439			100	0			183
$C_{12}H_{18}Cl_2N_2OS$	159246		1	70	±,0	250	0(T),0	224
$C_{12}H_{18}Cl_2N_2O_4S_2$	138412			50	+,+,+,0	600	0	226
$C_{12}H_{18}F_3NO_3S_2S_1$	132919			50	+,±	600	0	244

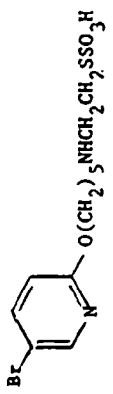
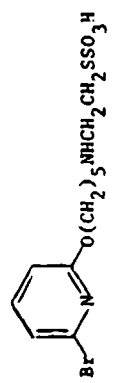
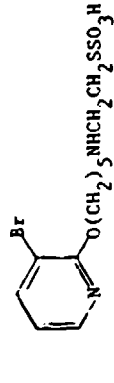
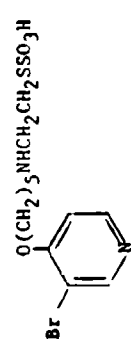
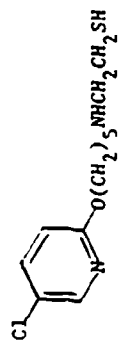
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{18}NC_5PS$	4782			250	0			56,243
$C_{12}H_{18}N_2OS$	61130		24	100	0			145,240
$C_{12}H_{18}N_2OS_2$	181183		27	75	±, 0	523	0	70
$C_{12}H_{18}N_2O_2S$	145720		1	50	+, ±	200	+(T), 0	98
$C_{12}H_{18}N_2O_2S_2$	181640			150	+, 0	600	0	61

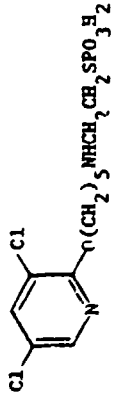
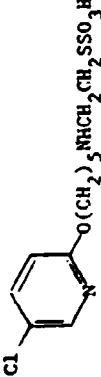
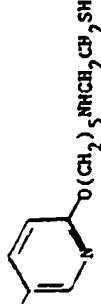
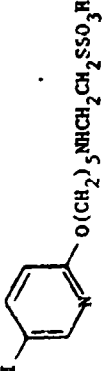
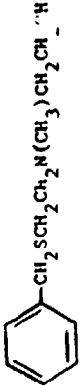
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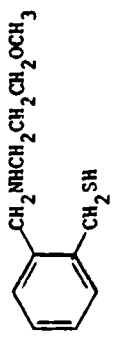
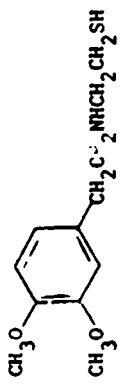
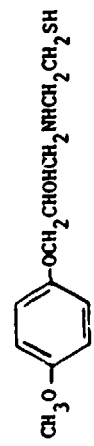
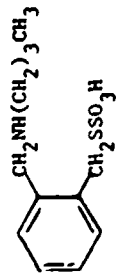
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{18}N_2O_3S_2$	2743			15	+,0	50	0	37
$C_{12}H_{18}N_2O_3S_3$	2631			300	0			297
$C_{12}H_{18}N_2O_4S_2$	37720			20	+(T),0	70	±	299
$C_{12}H_{18}N_2O_5S_2$	60237			100	0(T),+,+			299
$C_{12}H_{18}N_2O_5S_2$	14981			50	±,0	600	0	98,299
$C_{12}H_{18}N_2O_6S_2$	4447			50	+,±	2000	0	226

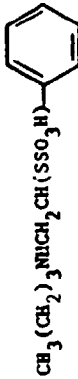
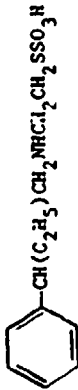
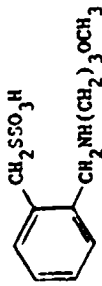
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{18}N_2O_6S_3$	6923			400	0(T), 0			183
$C_{12}H_{18}N_2S$	10254			130	+ 0			11
$C_{12}H_{18}N_2S_2$	935		6	60	0			109
$C_{12}H_{18}N_2S_2$	63083		1	25	0	100	0	70
$C_{12}H_{18}N_4O_2S$	40336		2	320	+ 0			116, 325

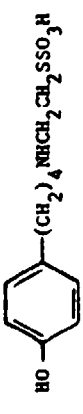
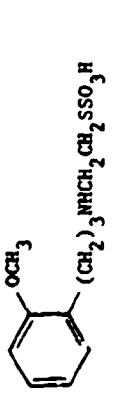
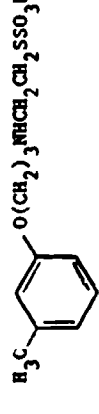
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{18}N_4O_5S$	67627		2	30	0			325
$C_{12}H_{18}N_4O_5S_2$	90396			100	0			145
$C_{12}H_{18}N_4O_5S_2$	48682			250	0			325
$C_{12}H_{19}BrN_2OS$	42764		2	90	±0	300	0(T)	224
$C_{12}H_{19}BrN_2OS$	104699		1	50	0			224

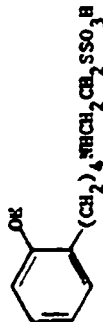
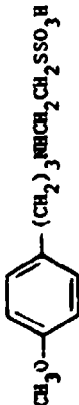
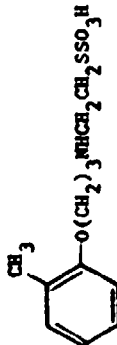
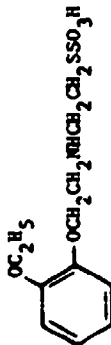
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{19}BrN_2O_4S_2$	43900			50	+, +, 0			224
$C_{12}H_{19}BrN_2O_4S_2$	50480			100	0			224
$C_{12}H_{19}BrN_2O_4S_2$	99582			90	±, ±			224
$C_{12}H_{19}BrN_2O_4S_2$	117900			25	0			224
$C_{12}H_{19}ClN_2OS$	85563		1	60	+, 0	300	+(T)	224

Molecular Formula	IP Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{19}Cl_2N_2O_4PS$	159245		42.57	80	0	600	± 0	148
$C_{12}H_{19}ClN_2O_4S_2$	82422			150	$+(T), -(T), +(T), -(T)$	1000	0	224
$C_{12}H_{19}IN_2OS$	99587			50	$0, \pm$	150	0	224
$C_{12}H_{19}IN_2O_4S_2$	99575			50	± 0			274
$C_{17}H_{19}INOS$	879		1	80	0			231

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{19}NOS$	1993		1	25	0			99
$C_{12}H_{19}NO_2S$	2302		1	75	0			124
$C_{12}H_{19}NO_2S$	2688		1	40	0			103,104,199
$C_{12}H_{19}NO_3S$	2759		1	60	0			103,104,199
$C_{12}H_{19}NO_3S_2$	1176			200	0			99

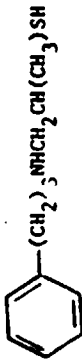
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{19}NO_3S_2$	1257			100 0				99
$C_{12}H_{19}NO_3S_2$	2754			120 +, +, 0		2000 0		191, 239, 287
$C_{12}H_{19}NO_3S_2$	3550			100 0				56, 242
$C_{12}H_{19}NO_3S_2$	3551			400 0				56, 242
$C_{12}H_{19}NO_3S_2$	4114			50 0				239, 181, 287
$C_{12}H_{19}NO_4S_2$	1995			187 0				99

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{19}NO_4S_2$	2744			50	0			110
$C_{12}H_{19}NO_4S_2$	3299			150	±, 0			226, 285, 294
$C_{12}H_{19}NO_4S_2$	3300			75	±(T), 0			226
$C_{12}H_{19}NO_4S_2$	3301			75	0			226
$C_{12}H_{19}NO_4S_2$	3305			200	0(T), 0(T)			226, 294

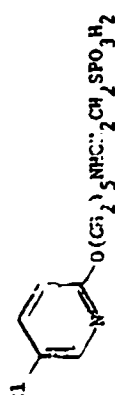
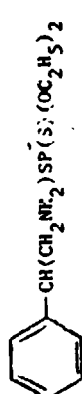
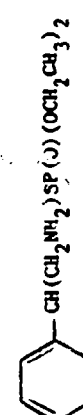
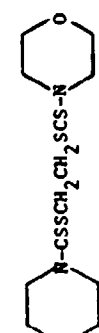
Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{19}NO_4S_2$	4102			100	0			226,285
395 $C_{12}H_{19}NO_4S_2$	4547			75	+0	1000	0	226
$C_{12}H_{19}NO_4S_2$	5979			75	0			226
$C_{12}H_{19}NO_5S_2$	3240			100	0			226
$C_{12}H_{19}NO_5S_2$	25876			100	0			324

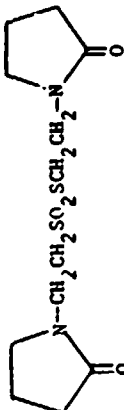
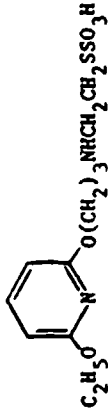
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{19}NO_5S_3$	6129			400	0			183
$C_{12}H_{19}NO_5S_3$	6134			100	0			183
$C_{12}H_{19}NO_6S$	2844	$CH_3CONHC(CH_2OCOCH_3)_2CH_2SCOCH_3$		1800	0(T), 0			107
$C_{12}H_{19}NO_7S_2$	4485	$CH_2=CHCH_2OCOCH_2CHNHCH_2CH_2SSO_3H$ COOCH ₂ CH=CH ₂		250	0			56,242
$C_{12}H_{19}NS$	635		1	80	0(T), 0			99
$C_{12}H_{19}NS$	1177		1	44	0			99

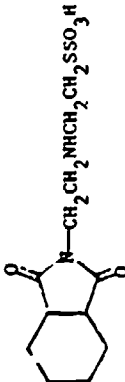
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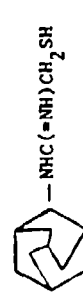
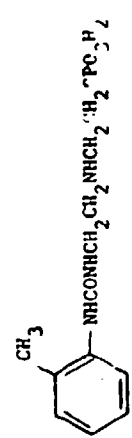
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₂ H ₁₉ NS	1182			500	0			99
C ₁₂ H ₁₉ NS	1804		1	593	0			184
C ₁₂ H ₁₉ NS	2397		1	25	0			124
C ₁₂ H ₁₉ NS	3433		1	60	0			107
C ₁₂ H ₁₉ NS	190206			200	0	400	0	126

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{19}NS_2$	3431		17	50	0			132
$C_{12}H_{19}N_3OS$	3693		1	100	0			147
$C_{12}H_{19}N_3OS$	71460		2	60	0			92
$C_{12}H_{19}N_3OS_3$	88299			70	0(T), 0			59
$C_{12}H_{19}N_3O_5S_2$	104696			80	+, ±	600	0	224

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{20}ClN_2O_4PS$	143926		18	100	+0	300	±	43
$C_{12}H_{20}NO_2PS_2$	111501		27	2	0			54,241
$C_{12}H_{20}NO_3PS$	111502		19	2	0			241
$C_{12}H_{20}N_2O_2S_2$	4553			100	0			307
$C_{12}H_{20}N_2O_2S_4$	601			500	0			259

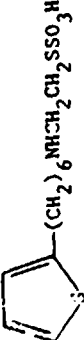
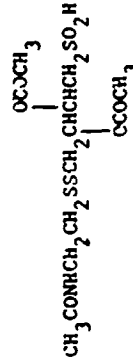
Molecular Formula	WR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{20}N_2O_5S_2$	157798			25	+ , 0	200	0 (T), 0	98,299
$C_{12}H_{20}N_2O_5S_2$	166717		42	20	+ , + , 0	200	0	299
$C_{12}H_{20}N_2O_5S_2$	1465			750	+ (T)			25
$C_{12}H_{20}N_2O_5S_2$	108544			150	0			54,242
$C_{12}H_{20}N_2O_5S_2$	80865			60	0			92

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{12}H_{20}N_2O_5S_2$	99602			100	0			256

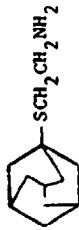
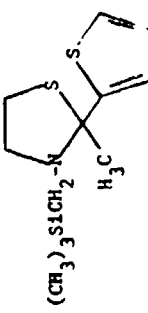
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{20}N_2O_6S_2$	247	$[CH_3CONHCH(COOCH_3)CH_2S^-]_2$		1000	0			290
$C_{12}H_{20}N_2S$	2404		2	20	0			211
$C_{12}H_{20}N_2S$	166832		1	10	+0	20	+0	299
$C_{12}H_{20}N_2S$	166834		1	20	+0	40	+0	299
$C_{12}H_{20}N_2O_3PS_2$	5024			50	0			56,243
$C_{12}H_{20}N_2O_3PS_4$	9064			100	0			165

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{20}N_3O_4PS$	32063			100	0			165,243
$C_{12}H_{20}N_4S$	35987		8	6.25	0(T), 0			264
$C_{12}H_{21}NOS$	1837			50	0			150
$C_{12}H_{21}NO_2S$	50485			300	0			92
$C_{12}H_{21}NO_3S_2$	33771			320	T, +, +			223,145

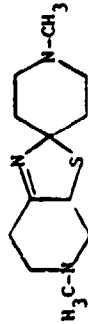
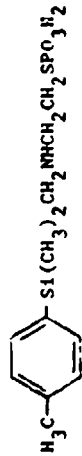
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Molecular Formula	MR Number	Structure	Salt Form	Antiradiation activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{21}NO_3S_2$	121231			70 $\pm$ 1		800	0	223
$C_{12}H_{21}NO_3S_2S_1$	122952			80 $\pm$ 0				244
$C_{12}H_{21}NO_3S_3$	5033			25	0			295
$C_{12}H_{21}NO_3S_2S_1$	121769			50	0			244
$C_{12}H_{21}NO_3S_2S_1$	177577		57	300	0	900	0	290

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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{21}NS$	51983		1	20	0			223
$C_{12}H_{21}NS$	125697		6	30	0			223
$C_{12}H_{21}NS$	173165			75	0	300	0	311
$C_{12}H_{21}NS_2S_1$	33584			150	0			292
$C_{12}H_{21}NS_2S_1$	53376			112	0			292

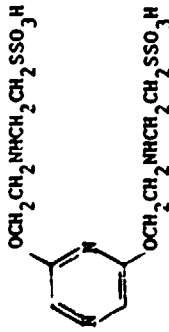
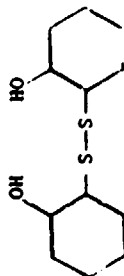
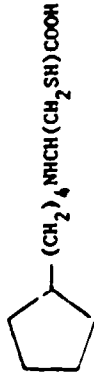
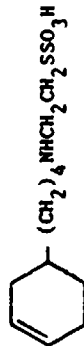
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{21}NS_2S_1$	53378			360	0			292
$C_{12}H_{21}N_2O_3PS$	74062			180	0			145, 263
$C_{12}H_{21}N_2O_3PS$	199634			40	+(T), +, ±	100	+(T), 0	269
$C_{12}H_{21}N_2O_4PS$	49563			70	0			108, 313
$C_{12}H_{21}N_2O_5PS$	108514		46, 57	200	+, 0	600	+, 0	256

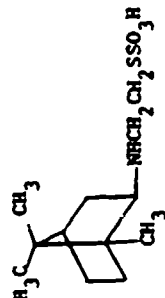
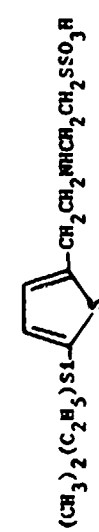
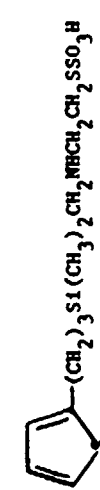
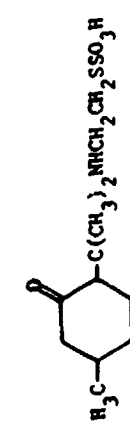
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{21}N_3O_6S$	1885	$CH_3CH_2COOCH_2NHCONHCH_2CH_2SCONHCH_2COOCH_2CH_3$		593	0			139
$C_{12}H_{21}N_3S$	1805		2	200	+(T)			326
$C_{12}H_{22}F_3NOS$	2464	$CH_3(CH_2)_7N(COCF_3)CH_2CH_2SH$		400	0			209
$C_{12}H_{22}NO_3PS$	35979			80	+, ±, 0	500	0	145, 223
$C_{12}H_{22}NO_3PS$	125696		57	70	0	500	0	223
$C_{12}H_{22}NO_3PSSI$	138746			30	0	200	0	244

411

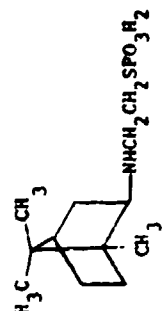
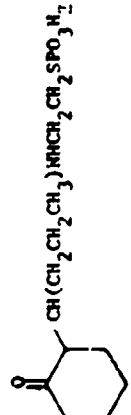
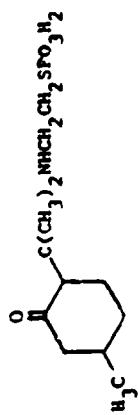
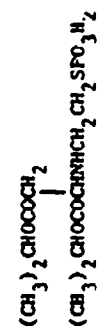
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I. P.		P. O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{22}NO_4PSSi$	138745			30	0	150	0	244
$C_{12}H_{22}N_2OS_2$	3076			400	+(T), +(T)			171
$C_{12}H_{22}N_2OS$	61139		2	100	0			92
$C_{12}H_{22}N_2OS_4$	2925			600	0			167
$C_{12}H_{22}N_2O_2S$	1749			250	0			327
$C_{12}H_{22}N_2O_3S_2$	1149			5	0			25

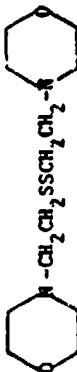
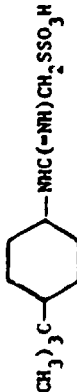
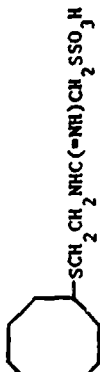
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{22}N_2O_3S_2$	2742			1000 0				297
$C_{12}H_{22}N_2O_3S_2$	92973			15 +(T).+.0		100	+(T).+.±	280,299
$C_{12}H_{22}N_2O_3S_2$	94293	 cis		30 +.+.+.0		200 0		280,299
$C_{12}H_{22}N_2O_3S_3$	2635			100 0				297
$C_{12}H_{22}N_2S_3$	764			80 0				177

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{22}N_4O_8S_4$	98077			34	0			99
$C_{12}H_{22}O_2S_2$	104710			100	0			157
$C_{12}H_{22}NO_2S$	61137			180	0			92
$C_{12}H_{23}NO_3S_2$	5035			25	+,+,+,0	500	0	226,293

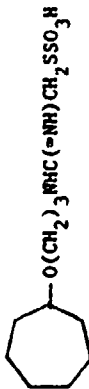
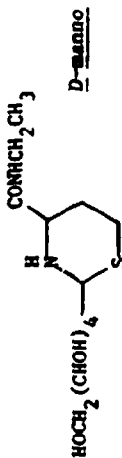
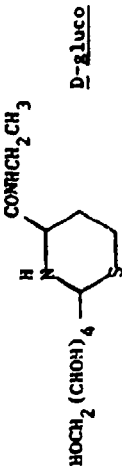
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{23}NO_3S_2$	40334			80	+(T), 0	500	0	116
$C_{12}H_{23}NO_3S_3S1$	76736			100	0(T), +, ±			244
$C_{12}H_{23}NO_3S_3S1$	134790			50	+, +			244
$C_{11}H_{23}NO_3S_4S_2$	4484			25	0			56,242

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{23}NO_7S_2$	3837	$CH_3CH_2CH_2OCOCH_2CHNCH_2CH_2SSO_3H$ $\quad$						

Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{24}NO_3PS$	40335		41,57	320	+,0			223
$C_{12}H_{24}NO_4PS$	4480			25	0			56,243
$C_{12}H_{24}NO_4PS$	4481			250	0			56,243
$C_{12}H_{24}NO_7PS$	4476			800	0			56,243

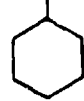
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{24}NO_7PS$	4477	$CH_3CH_2CH_2OCOCH_2$ $CH_3CH_2CH_2OCOCH_2CH_2CH_2SPO_3H_2$		800 0				56,243
$C_{12}H_{24}N_2O_5S_2$	177475		2	100 $\pm$, +		600 $\pm$, $\pm$, 0		129
$C_{12}H_{24}N_2O_5S_4$	2481	$(CH_3CONCH_2CH_2SSCH_2CH_2)_2$		250 0				208
$C_{12}H_{24}N_2O_5S_2$	4555			3 $\pm$, 0				190
$C_{12}H_{24}N_2O_5S_2$	150632			8 $\pm$, 0		100 0		300
$C_{12}H_{24}N_2O_5S_3$	204172			10 $\pm$ (T), $\pm$, 0		100 $\pm$, $\pm$, $\pm$, 0		120

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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{24}N_2O_4S_2$	6456	$(CH_3COOCH_2CH_2NHCH_2CH_2S^-)_2$ 	2	500	$\pm(T), \pm, 0$			121
$C_{12}H_{24}N_2O_4S_2$	166831			9	$\pm, 0$	60	$\pm, \pm$	98,299
$C_{12}H_{24}N_2O_4S_4$	111478	$CH_3CONHCH_2CH_2SS(CH_2)_4SO_2SCH_2CH_2NHCOCH_3$		40	0			197
$C_{12}H_{24}N_2O_6S$	2005	 D-manno		3160	0			220
$C_{12}H_{24}N_2O_6S$	2006	 D-glucos		3160	0			220

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{24}N_2O_6S_4$	1940			1000	0			27
$C_{12}H_{24}N_2O_6S_4$	2499	$(CH_3CONHCH_2CH_2SSO_2CH_2CH_2-)_2$		300	0			328
$C_{12}H_{24}N_2S_2$	177474		2	20	0	200	+(T).0	7
$C_{12}H_{24}O_4S_2$	1913			500	0			12
$C_{12}H_{25}NO_2S$	3232		1	40	0			107
$C_{12}H_{25}NO_3S_2$	2523	$CH_3(CH_2)_3CH(C_2H_5)CH_2SO_2SCH_2CH_2NICOCH_3$		30	0			80

420

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{12}H_{25}NO_3S_2$	2691			20	+,+,+,0	800	0	226,293
$C_{12}H_{25}NO_3S_2$	3562			100	+,+,+,+	1000	0	226,324,293
$C_{12}H_{25}NO_3S_2$	4104			10	+,0	500	+	226,293
$C_{12}H_{25}NO_3S_2$	91635	 L		70	+,+,+,0	600	0	92,293
$C_{12}H_{25}NO_4S_2$	2972			75	+(T),0	750	0	226,286
$C_{12}H_{25}NO_4S_2$	3423		57	200	0(T),0(T),0	1500	0	111

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{25}NO_4S_2$	4541			100 +,0		600 0		226,286
$C_{12}H_{25}NO_4S_2$	171888			50 +,0		600 0(T),0		58
$C_{12}H_{25}NO_5S_3$	8782			100 0				183
$C_{12}H_{25}NS$	4808		1	40 +,0				144,295
$C_{12}H_{25}NS_2$	132727		1	60 +,0		250 0		298
$C_{12}H_{25}NS_2$	152924		1	75 0		200 0		98

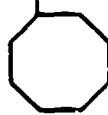
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{25}NS_2$	154977		1	75	+0	200	+0	298
$C_{12}H_{25}NS_2$	156715		1	100	+(T) 0	250	+0	298
$C_{12}H_{25}NS_2$	166830		1	67	+0	200	+0	148
$C_{12}H_{25}N_3OS$	4616		1	75	0			147
$C_{12}H_{25}N_3O_2S$	1884	$CH_3(CH_2)_3NHCONHCH_2CH_2SCONH(CH_2)_3CH_3$		500	0			20
$C_{12}H_{25}N_3S_3$	1883	$CH_3(CH_2)_3NHCSNHCH_2CH_2SCSNH(CH_2)_3CH_3$		800	0			139

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{26}NO_3PS$	117909			30 0		200 0		157
$C_{12}H_{26}NO_3PS$	159742		42	11 0		200 +,0		148
$C_{12}H_{26}NO_3PS_3$	69886	$CH_3CONHCH_2CH_2S-S-P(S)[O(CH_2)_3CH_3]_2$		80 0				301
$C_{12}H_{26}NO_4PS$	171889		53	50 +,0		100 0		58
$C_{12}H_{26}NO_5PS$	4793	$CH_3(CH_2)_5CH(CH_2COOCH_3)NHCH_2CH_2SPO_3H_2$		400 +,0				56,243
$C_{12}H_{26}N_2OS$	150077	$(CH_2)_9NHCH_2CH_2SHO$	27	8 +,0				19
$C_{12}H_{26}N_2O_2S$	2873	$(CH_2)_3CONHCH_2CH_2OCOCH(CH_3)CH_2NHCH_2CH_2SH$	2	400 0(T),0				159

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{26}N_2O_5S_2$	2608	$CH_3(CH_2)_9NHC(=NH)CH_2SSO_3H$		20				37
$C_{12}H_{26}N_2O_5S_4$	62942	$HO_3SSCH_2CH_2NHCH_2-$  $-CH_2NHCH_2CH_2SSO_3H$ <u>trans</u>		280	0(T).0			116
$C_{12}H_{26}N_2O_5S_4$	74176	$HO_3SSCH_2CH_2NHCH_2-$  $-CH_2NHCH_2CH_2SSO_3H$ <u>cis</u>		500	0(T).0			116
$C_{12}H_{26}N_2S_2$	62944	$HSCCH_2CH_2NHCH_2-$  $-CH_2NHCH_2CH_2SH$ <u>trans</u>	2	56	0			116
$C_{12}H_{26}N_2S_2$	76967	$HSCCH_2CH_2NHCH_2-$  $-CH_2NHCH_2CH_2SH$ <u>cis</u>	2	40	0			116

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{26}N_4O_2S_2$	3600	$HSCH_2CH_2NH(CH_2)_3NHCOONH(CH_2)_3NHCH_2CH_2SH$	2	25	+(T), 0			325
$C_{12}H_{26}N_4O_2S_2$	28444	$CH_3NHCOCH(CH_3)NHCH_2CH_2SSCH_2CH_2NHCH(CH_3)CONHCH_3$		300	0, ±			136
$C_{12}H_{26}N_4O_2S_4$	3350	$HO_3SSCH_2CH_2NH(CH_2)_3NHCOONH(CH_2)_3NHCH_2CH_2SSO_3H$		200	0			325
$C_{12}H_{26}OS$	2501	$CH_3(CH_2)_9SCH_2CH_2OH$		200	0(T), 0			12
$C_{12}H_{27}NO$	2420	$CH_3(CH_2)_9NHCH_2CH_2OH$		60	0			12
$C_{12}H_{27}NOS$	1895	$CH_3(CH_2)_7CHOHCH_2NHCH_2CH_2SH$	1	50	0			207
$C_{12}H_{27}NO_2S$	2951	$CH_3(CH_2)_7NHC(CH_2OH)(CH_2)_2SH$	1	75	0			107
$C_{12}H_{27}NO_3S_2$	1607	$CH_3(CH_2)_9NHCH_2CH_2SSO_3H$	57	10	+, +, 0	700	0	161, 181, 239
$C_{12}H_{27}NO_3S_2$	2245	$CH_3(CH_2)_7CH(CH_3)NHCH_2CH_2SSO_3H$		15	+, ±, 0			161, 181, 239

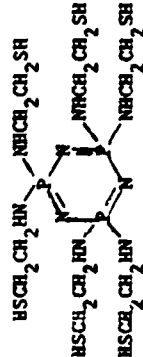
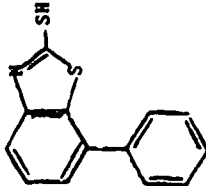
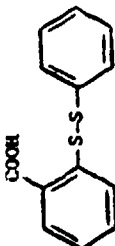
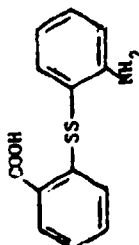
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{27}NO_3S_2$	2390	$CH_3(CH_2)_6CH(CH_2CH_3)NHCH_2CH_2SSO_3H$		25	$+, \pm, 0$	400	0	161, 181, 239
$C_{12}H_{27}NO_3S_2$	3358	$(CH_3)_2CH(CH_2)_3CH(CH_3)CH_2CH_2NHCH_2CH_2SSO_3H$		30	$+, \pm, 0$	1000	0	181, 239
$C_{12}H_{27}NO_4S_2$	2907	$HOCH_2(CH_2)_9NHCH_2CH_2SSO_3H$		100	0			226
$C_{12}H_{27}NO_4S_2$	2909	$CH_3(CH_2)_7CH(CH_2OH)NHCH_2CH_2SSO_3H$		5	0			226
$C_{12}H_{27}NO_4S_2$	2991	$CH_3O(CH_2)_9NHCH_2CH_2SSO_3H$		60	$+, \pm$	1000	0	226
$C_{12}H_{27}NO_4S_2$	152916	$CH_3(CH_2)_8NHCH_2CH(OH)CH_2SSO_3H$	53	25	$+, 0$	200	$\pm, 0$	58
$C_{12}H_{27}NS$	218	$[(CH_2)_4]_2NCH_2CH_2SH$		150	0			12
$C_{12}H_{27}NS$	222	$[(CH_3)_2CHCH_2CH_2]_2NCH_2CH_2SH$		300	0(T), 0			12
$C_{12}H_{27}NS$	228	$[(CH_3)_3CHCH_2CH_2]_2NCH_2CH_2SH$		25	$+, \pm$	175	0	12
$C_{12}H_{27}NS$	1518	$CH_3(CH_2)_9SCH_2CH_2NH_2$		30	0			12
$C_{12}H_{27}NS$	1521	$CH_3(CH_2)_5C(CH_3)_2CH_2NHCH_2CH_2SH$		125	0			12

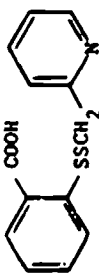
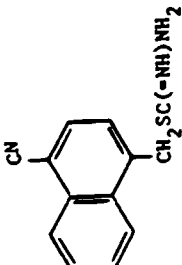
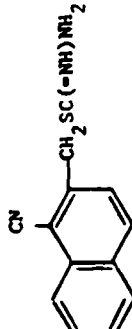
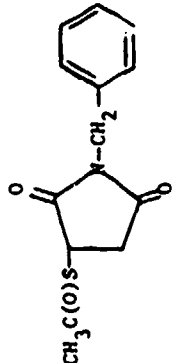
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{27}NS$	2026	$CH_3(CH_2)_7NHCH_2C(CH_3)_2SH$	1	42	0			163
$C_{12}H_{27}NSSe$	2732	$CH_3(CH_2)_9SSeCH_2CH_2NH_2$	1	20	0			17
$C_{12}H_{27}NS_2$	2580	$CH_3(CH_2)_9SSCH_2CH_2NH_2$	1	40	0			202
$C_{12}H_{27}N_2O_3PS$	80393		42	15	0			145,243
$C_{12}H_{27}N_3S$	4439	$CH_3(CH_2)_8NCH_2CH_2SH$ $C(=NH)NH_2$	25	5	0			315
$C_{12}H_{28}Cl_2N_2MI_2S_2$	2354	$[(CH_3CH_2)_2NCH_2CH_2S]_2MI \cdot MI_2$		12.5	0			76
$C_{12}H_{28}NO_3PS$	2294	$CH_3(CH_2)_9NHCH_2CH_2SPO_3H_2$		50	+0	200	0	39
$C_{12}H_{28}NO_4PS$	152917	$CH_3(CH_2)_8NHCH_2CH_2CH_2SPO_3H_2$	50			286	$\pm(T), \pm$	58
$C_{12}H_{28}N_2MI_2S_2$	2351	$[(CH_3CH_2)_2NCH_2CH_2S]_2MI$		50	0			76
$C_{12}H_{28}N_2MI_2S_2$	3075	$[(CH_3)_3CNHCH_2CH_2S]_2MI$		60	+			76
$C_{12}H_{28}N_2O_5S_2$	2201	$(CH_3CH_2)_2NCH_2CH_2SSO_2CH_2CH_2N(CH_2CH_3)_2$	2	125	0(T), 0(T)			203
$C_{12}H_{28}N_2O_3S$	1892	$H_2N(CH_2)_3(OCH_2CH_2)_3CH_2NHCH_2CH_2SH$	2	75	0			108,207

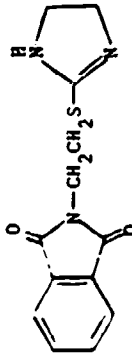
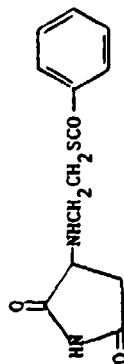
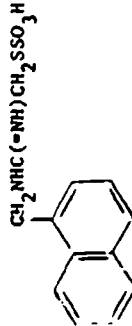
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{28}N_2O_5S_2$	4534	$CH_3(CH_2)_7NHCH_2CH_2NHCH_2CH_2SSO_3H$		100	0(T), 0			111
$C_{12}H_{28}N_2O_4S_2$	3348	$HOCH_2CH_2OCH_2CH_2NHCH_2CH_2SSCH_2CH_2NHCH_2CH_2OCH_2CH_2OH$	2	750	0			111
$C_{12}H_{28}N_2O_6P_2S_2$	62943	$H_2O_3PSCCH_2CH_2NHCH_2$  $CH_2NHCH_2CH_2SPO_3H_2$ <u>trans</u>	47, 54	20	0			116
$C_{12}H_{28}N_2O_6P_2S_2$	76968	$H_2O_3PSCCH_2CH_2NHCH_2$  $CH_2NHCH_2CH_2SPO_3H_2$ <u>cis</u>	51, 54	40	0(T), 0			116
$C_{12}H_{28}N_2O_6S_4$	2379	$[BO_3S(CH_2)_4NHCH_2CH_2S-]_2$		1000	0			117
$C_{12}H_{28}N_2O_6S_4$	92970	$HO_3SS(CH_2)_3NH(CH_2)_6NH(CH_2)_3SSO_3H$		50	0(T), 0			270
$C_{12}H_{28}N_2PdS_2$	2350	$[(CH_3CH_2)_2NCH_2CH_2S-]_2Pd$		100	0			76
$C_{12}H_{28}N_2S$	1732	$H_2N(CH_2)_{10}NHCH_2CH_2SH$	2	75	7			207
$C_{12}H_{28}N_2S$	2220	$CH_3(CH_2)_7NHCH_2CH_2NHCH_2CH_2SH$	2	30	±, 0			211

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose mg/Kg	Rating	Dose mg/Kg	Rating	
C ₁₂ H ₂₈ N ₂ S	2696	CH ₃ (CH ₂) ₃ NHCH ₂ CH(SH)CH ₂ CH ₂ NH(CH ₂) ₃ CH ₃	2	50	0			217
C ₁₂ H ₂₈ N ₂ SSi	34425	(CH ₃) ₃ Si(CH ₂) ₃ -N 		112	0(T), 0			244
C ₁₂ H ₂₈ N ₂ S ₂	70	[CH ₃ (CH ₂) ₃ NHCH ₂ CH ₂ S-] ₂		75	0(T), 0			69
C ₁₂ H ₂₈ N ₂ S ₂	1894	HSCH ₂ CH ₂ NH(CH ₂) ₈ NHCH ₂ CH ₂ SH	2	50	0			207
C ₁₂ H ₂₈ N ₂ S ₂	132189	[(CH ₃) ₃ CNCH ₂ CH ₂ S-] ₂	28	60	0	400	0(T), 0	1
C ₁₂ H ₂₈ N ₂ S ₂ Zn	173114	[CH ₃ (CH ₂) ₃ NHCH ₂ CH ₂ S-] ₂ Zn		15	±, 0	100	0(T), 0	71
C ₁₂ H ₂₈ N ₂ S ₃	139243	[CH ₃ (CH ₂) ₃ NHCH ₂ CH ₂ S-] ₂ S	28	50	0			1
C ₁₂ H ₂₈ N ₂ O ₂ S ₂	25897	(CH ₃) ₂ C=NNHC[=NCH(CH ₃) ₂]NH(CH ₂) ₃ NHCH ₂ CH ₂ SSO ₃ H		80	0(T), 0			165, 242
C ₁₂ H ₂₈ N ₂ O ₂ S ₂	2984	[-CH=OCH ₂ NHCH(CH ₃)CH ₂ SC(=NH)NH ₂] ₂	4	2	0			267

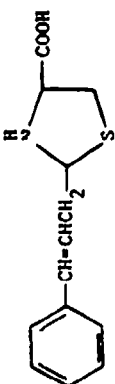
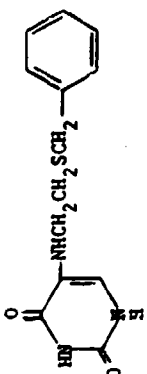
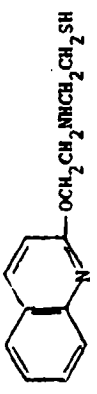
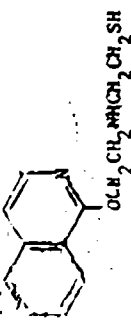
Molecular Formula	VA Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{29}N_2O_3PS$	8368	$CH_3(CH_2)_7N(CH_2CH_2N(CH_2CH_2SPO_3H_2)$	44	50	0(T).0		154,169	
$C_{12}H_{29}N_2O_3S$	108532	$H(CH_2CH_2O-)_2(CH_2)_3NH(CF_2)_3N(CH_2CH_2SPO_3H_2$	42	110	0		54,243	
$C_{12}H_{29}N_4O_3PS$	32061	$(CH_3)_2CHNHC(=NCH(CH_3)_2)NH(CH_2)_3N(CH_2CH_2SPO_3H_2$		20	0		165,243	
$C_{12}H_{30}N_3PS_3$	1817	$(CH_3(CH_2)_3)_2NP(S)(N(CH_2CH_2SH)_2$		350	0(T).0(T)		186	
$C_{12}H_{30}N_4O_2S_2$	3326	$HOCH_2CH_2N(CH_2CH_2N(CH_2CH_2SCH_2CH_2N(CH_2CH_2OH$	4	400	0(T).0		111	
$C_{12}H_{30}N_4S_2$	99599	$BSCH_2CH_2NH(CH_2)_2NH(CH_2)_4NH(CH_2)_2N(CH_2CH_2SH$	9	40	0		62	
$C_{12}H_{30}N_4S_2$	183159	$(CH_3NH(CH_2)_3N(CH_2CH_2S-)_2$	17.51	100	+, +, ±, 0	500 ±, 0	11	
$C_{12}H_{30}N_5S_2$	139244	$[H_2NC(=NH)NH(CH_2)_3N(CH_2CH_2S-)_2$	30	50	0, ±, 0	400 0(T).0(T).0	1	
$C_{12}H_{36}Br_2Co_2N_6S_6$	1284	$(Ni(Co(NH_2CH_2S-)_3)_2)Br_2$		10	±		76	
$C_{12}H_{36}Br_3Co_3N_6S_6$	1285	$(Co(Co(NH_2CH_2S-)_3)_2)Br_3$		7.5	0		76	

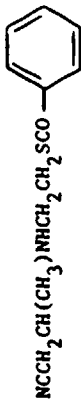
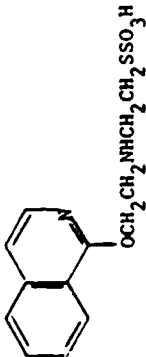
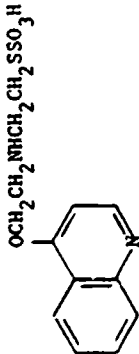
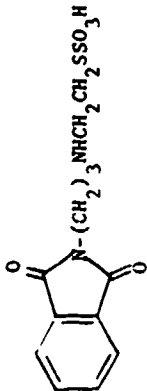
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{12}H_{36}N_9P_3S_6$	2260			80				127
$C_{13}H_9NS_2$	2778			1000				329
$C_{13}H_{10}O_2S_2$	142070			500				5
$C_{13}H_{11}NO_2S_2$	3687			750				247

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{11}NO_2S_2$	4101			400	60			88
$C_{13}H_{11}N_3S$	836		6	30	0			319
$C_{13}H_{11}N_3S$	837		6	30	0			319
$C_{13}H_{13}NO_3S$	817			500	0			266

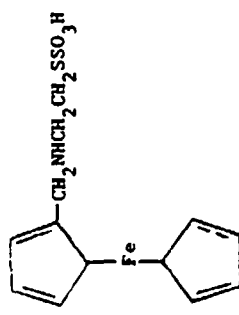
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{13}N_2O_2S$	644			70	0			63
$C_{13}H_{14}N_2O_3S$	92986		27	400	$\pm$, 0			54, 240
$C_{13}H_{14}N_2O_3S_2$	197499			50	$\pm$ (T), 0	600	0	120
$C_{13}H_{14}N_2O_3S_2$	197500			20	$\pm$, $\pm$	200	0	120

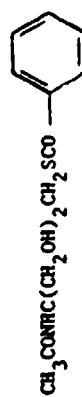
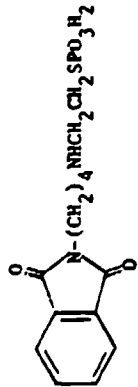
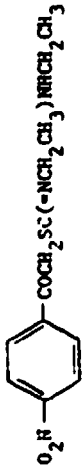
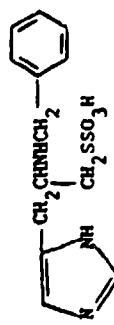
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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{15}NO_2S$	176357		1	600	0			318
$C_{13}H_{15}N_3O_2S$	810			1000	0			252
$C_{13}H_{16}N_2OS$	44152		2	60	0			99
$C_{13}H_{16}N_2OS$	44153		2	80	0			99

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{16}N_2O_5S_2$	98115		27	400 ±.0				54,240
$C_{13}H_{16}N_2O_5S_2$	2505			100 0				14
$C_{13}H_{16}N_2O_5S_2$	44154			110 0(T),0				99
$C_{13}H_{16}N_2O_5S_2$	98074			600 0(T),0				99
$C_{13}H_{16}N_2O_5S_2$	40341			320 0(T),0		800 0		330

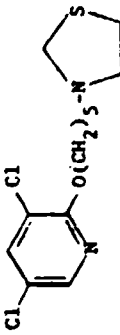
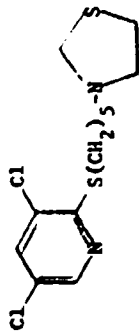
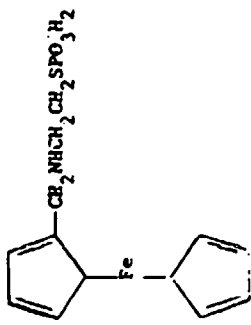
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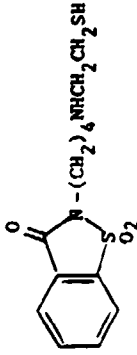
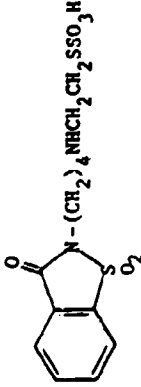
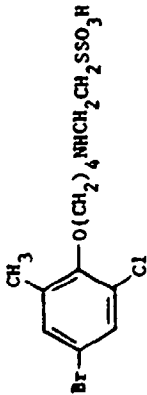
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{16}N_4O_2S$	80856		7	15	0			306
$C_{13}H_{17}FeNO_3S_2$	33791			400	0(T), 0			165,242
$C_{13}H_{17}NOS_2$	183328			70	0	400	0	70
$C_{17}H_{17}NO_3S$	3229			1200	±			107

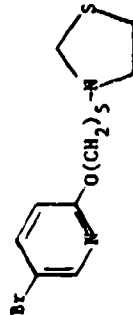
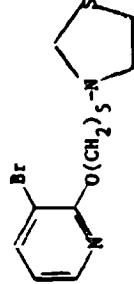
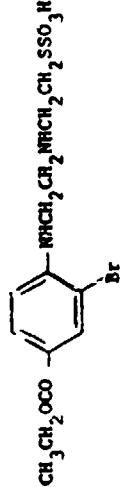
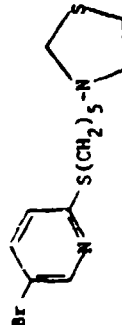
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{17}NO_3S$	94792		27	360 0				54,240
$C_{13}H_{17}NO_4S$	2626			700 0				179
$C_{13}H_{17}N_2O_5PS$	40342			100 0		600 0		306
$C_{13}H_{17}N_3O_3S$	1127		1	20 +				36
$C_{13}H_{17}N_3O_3S_2$	1905		26	60 0				110

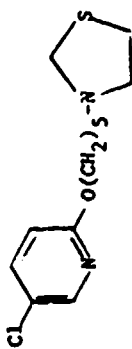
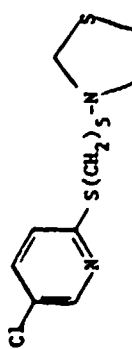
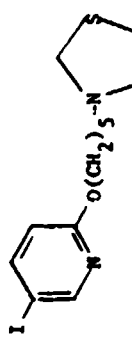
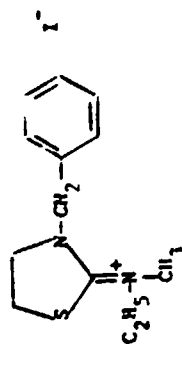
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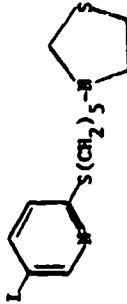
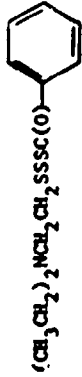
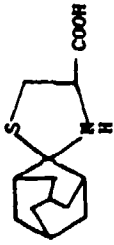
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{17}N_3O_5S_2$	35112			25	0			189,299
$C_{13}H_{18}Br_2N_2OS$	99583		1	200	0			224
$C_{13}H_{18}Br_2N_2S_2$	156717		1	200	0	600	0	298
$C_{13}H_{18}ClNOS$	138410		1	90	+0	300	±	324

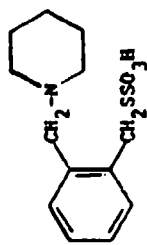
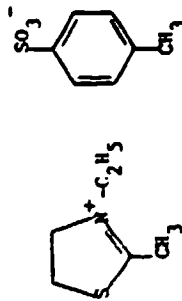
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{18}Cl_2N_2OS$	138413		1	50 0		450	$\pm$	224
$C_{13}H_{18}Cl_2N_2S_2$	138417		1	100 $\pm$ 0		500	$\pm$	43,298
$C_{13}H_{18}F_3NO_4S_2$	3335			30 $\pm$ 0		1200	0	226,294
$C_{13}H_{18}FeNO_3PS$	33783			200 0(T) 0				165,243

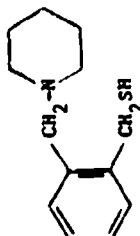
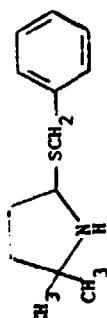
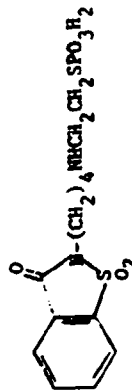
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{18}N_2O_5S_2$	142073		6,43	30	0			306
$C_{13}H_{18}N_2O_5S_3$	125691			75	0			306
$C_{13}H_{18}N_2O_2S$	108537		27	300	0(T), 0			54,240
$C_{13}H_{19}BrClNO_4S_2$	39750			50	0			294,324

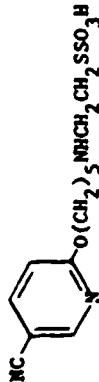
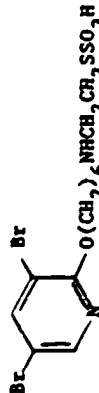
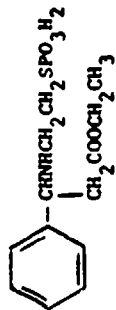
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{19}BrN_2OS$	43898		1	150	+,-	500	+(T),+,-	224
$C_{13}H_{19}BrN_2OS$	99584		1	100	0			224
$C_{13}H_{19}BrN_2O_2S_2$	28448			100	0(T),0			169
$C_{13}H_{19}BrN_2S_2$	132192		1	100	+,-0		+,-	43,298

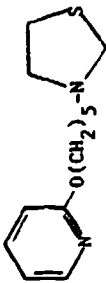
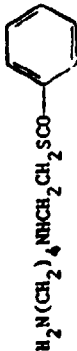
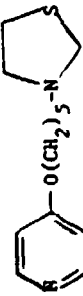
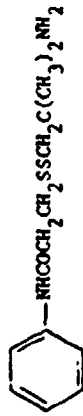
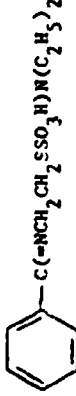
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{19}ClIN_2OS$	85562		2	80 +,0		300 +,±		157,224
$C_{13}H_{19}ClIN_2S_2$	126455		2	90 +,0		300 +,0		298
$C_{13}H_{19}IN_2OS$	94542		1	100 +,0		600 +,+,+,0		224
$C_{13}H_{19}IN_2S$	3135			20 0				132

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{19}IN_2S_2$	134787		1	50 $\pm$ 0		600	+(T) $\pm$ $\pm$	43,148,298
$C_{13}H_{19}NO$	165932		26,45	100 0		400 0		206
$C_{13}H_{19}NOS_2$	92983		27	150 $\pm$ 0				54,240
$C_{13}H_{19}NOS_3$	157071		1	50 0				19
$C_{13}H_{19}NO_2S$	190204			300 $\pm$ 0		500 0		126

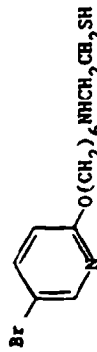
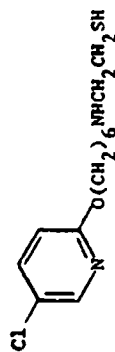
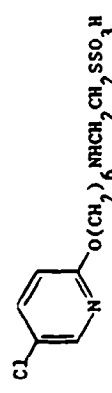
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{19}NO_3S$	186677			600	0			70
$C_{13}H_{19}NO_3S_2$	1253			141	0			99
$C_{13}H_{19}NO_3S_2$	2993		42	120	0			132
$C_{13}H_{19}NO_4S_2$	29692			100	S,S			144,285
$C_{13}H_{19}NO_5S_2$	5822			300	0			56,242

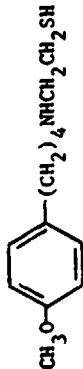
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{19}NS$	315		1	100	0			99
$C_{13}H_{19}NS$	1185		1	33	0			99
$C_{13}H_{19}NS$	2565			300	0			232
$C_{13}H_{19}N_2O_6PS_2$	125690			50	0			306

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{19}N_3O_2S$	9722		1	50	0			325
$C_{13}H_{19}N_3O_4S_2$	117931			80	0			224
$C_{13}H_{19}N_3O_5S_2$	9724			600	T, 0			325
$C_{13}H_{20}Br_2N_3O_4S_2$	124950			15	±, 0			224
$C_{13}H_{20}NO_4PS$	7455			100	0			165, 243
$C_{13}H_{20}NO_5PS$	4790			200	0			56, 243

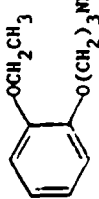
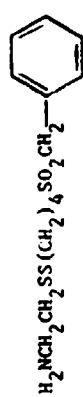
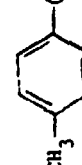
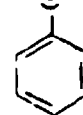
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				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{13}H_{20}N_2OS$	40641		2	50	0			144, 224
$C_{13}H_{20}N_2OS$	74058		24	100	0			145
$C_{13}H_{20}N_2OS$	117913		2	80	0	200	0	157, 224
$C_{13}H_{20}N_2OS_2$	181162		27	125	+0	300	+0	70
$C_{13}H_{20}N_2O_3S_2$	1862			40	0			221
$C_{13}H_{20}N_2O_3S_2$	2946			12	0			37

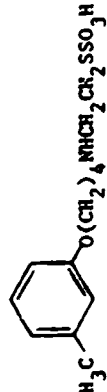
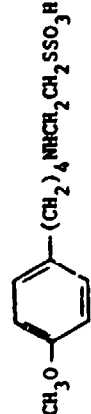
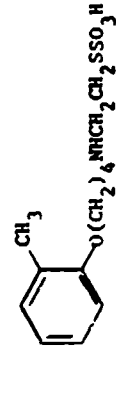
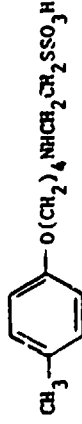
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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{13}H_{21}BrN_2OS$	91495		1	60	+, ±	200	+(T)	224
$C_{13}H_{21}BrN_2O_4S_2$	91496			50	0			224
$C_{13}H_{21}BrN_2O_4S_2$	94534			200	0			224
$C_{13}H_{21}ClN_2OS$	106165		1	60	+, 0	150	0	224
$C_{13}H_{21}ClN_2O_4S_2$	106162			60	0(T), +, ±	600	0	224

Molecular Formula	VK Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{21}ClN_4OS$	106159		2	60				157
$C_{13}H_{21}NOS$	33717		1	40	+, ±	100	0	324
$C_{13}H_{21}NOS$	30956		1	40	0	150	0 (T)	144
$C_{13}H_{21}NOS$	159562		1	60	0	600	0	206
$C_{13}H_{21}NOS$	165556			100	0	400	0	206

451

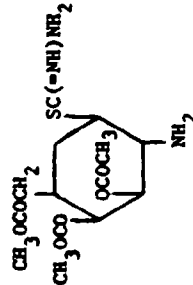
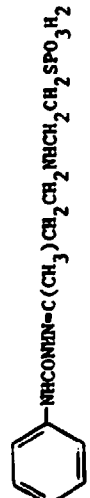
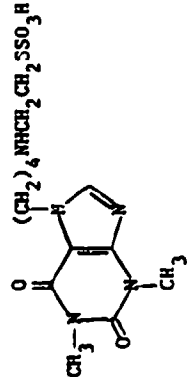
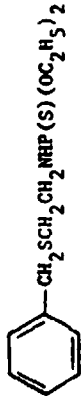
Molecular Formula	WR Number	Structure	Salt Form	Autirradiation Activity				Referenced
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{21}NO_2S$	2654			50	0			124
$C_{13}H_{21}NO_2S$	190205		42	300	1, +, ±, 0	400	+, +, +, ±	126
$C_{13}H_{21}NO_2S_3$	80316		1	180	+ , 0			197
$C_{13}H_{21}NO_3S$	2675		1	50	0			199
$C_{13}H_{21}NO_3S_2$	3086			5	0			285
$C_{13}H_{21}NO_3S_2$	3427			70	+(T), +			181, 239, 287

Molecular Formula	VA Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{21}NO_4S_2$	54554			640 0				145,242
$C_{13}H_{21}NO_4S_2$	2941			50 +, 0		600 0		226,294
$C_{13}H_{21}NO_4S_2$	3050			100 +, +, +, +		1000 +, +, 0		226,285
$C_{13}H_{21}NO_4S_2$	3087			50 +(T), +, +, 0				226,294
$C_{13}H_{21}NO_4S_2$	3121			25 +, 0		1000 +		226,294
$C_{13}H_{21}NO_4S_2$	3822			50 +(T), +, +, 0		1000 0		226,294

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{21}NO_4S_2$	4109			75	+, +, 0	1000	0	226, 285
$C_{13}H_{21}NO_4S_2$	5983			50	0			285, 295
$C_{13}H_{21}NO_4S_2$	5985			50	0			226, 295
$C_{13}H_{21}NO_4S_2$	6138			40	+, 0			226, 295
$C_{13}H_{21}NO_4S_2$	6139			50	0			226, 295

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{21}NO_4S_2$	6401			50	0			226
$C_{13}H_{21}NO_4S_2$	120767			60	0			157,285
$C_{13}H_{21}NO_5S_2$	3830			90	+(T), +.0	1000	0	226,294
$C_{13}H_{21}NO_5S_2$	8311			112	0			226
$C_{13}H_{21}NO_5S_3$	8164			150	0			183
$C_{13}H_{21}N_3O_7S$	1900		7	350	+, ±			331

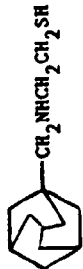
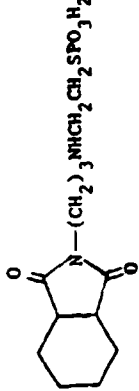
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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{21}N_3O_7S$	2729		7	225	0			332
$C_{13}H_{21}N_4O_4PS$	25906			100	0(T), 0			165, 243
$C_{13}H_{21}N_5O_5S_2$	27657			50	0			324
$C_{13}H_{22}NO_2PS_2$	2098			1870	0			186, 235

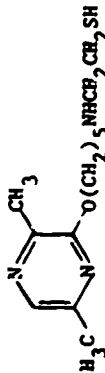
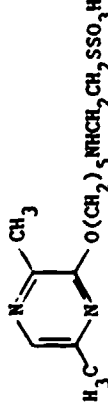
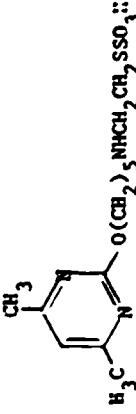
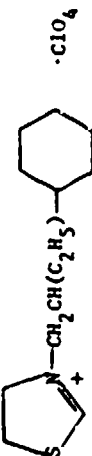
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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{13}H_{22}NO_5PS$	6318			800	0			56,243
$C_{13}H_{22}N_2OS$ 457	91491		1	40	0			224
$C_{13}H_{22}N_2OS$	99579		1	45	0			224
$C_{13}H_{22}N_2O_5S_2$	94140			10	+(T) . ±	200	0	280,299
$C_{13}H_{22}N_2O_4S_2$	85565			100	0			224

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{22}N_4O_5S_2$	94533			70	+,+,0	600	0	224
$C_{13}H_{22}N_4O_5S_2$	150640		77	100	0	300	0	148,254
$C_{13}H_{22}N_4O_5S_2$	104723			100	0			256
$C_{13}H_{22}N_4O_5S_2$	2181	$(C_2H_5OCO)_2NCONHCH_2CH_2SC(O)SCH_3$		900	0			146
$C_{13}H_{22}N_7S$	109342			12	+(T),+,+,0	30	+,+,0	299

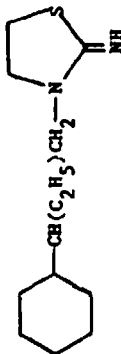
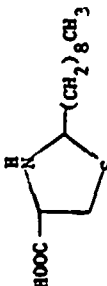
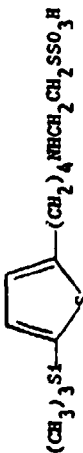
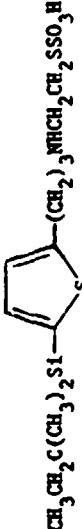
Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{23}NO_3S_2$	142080			100 $\pm$ 0		600 0		188
$C_{13}H_{23}NO_5S_4$	90704			40 $\pm$ 0		700 0		244
$C_{13}H_{23}NS$	142078		6	30 0				188
$C_{13}H_{23}NS_4S_1$	38485			900 0				292
$C_{13}H_{23}N_2O_3PS$	108513		46, 57	140 0				256

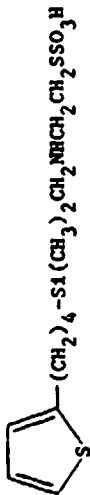
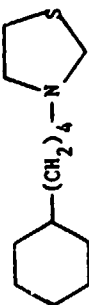
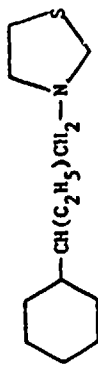
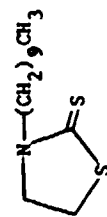
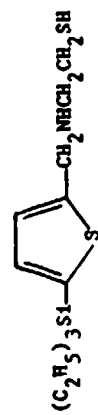
459

Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{23}N_3OS$	42766		2	100	+0			92
$C_{13}H_{23}N_3O_4S_2$	42765			180	+0			92
$C_{13}H_{23}N_3O_4S_2$	54206			80	0			92
$C_{13}H_{23}N_3S$	48681		7	180	0(T), +0			223
$C_{13}H_{24}ClNO_4S$	50486			140	0			92

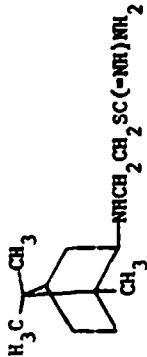
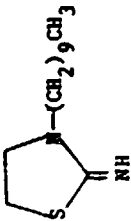
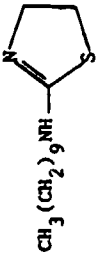
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{24}NO_3PS$	142079		57	60	+0	200	+,-	188
$C_{13}H_{24}N_2OS$	94791		24,42	10	0			54,240
$C_{13}H_{24}N_2OS_2$	2924		27	600	0(T), 0(T)			132
$C_{13}H_{24}N_2O_2S_2$	1482			750	0(T), 0			133
$C_{13}H_{24}N_2O_2S_4$	2714			200	0			208

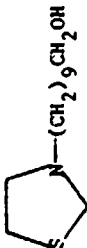
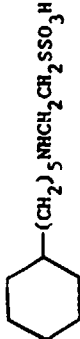
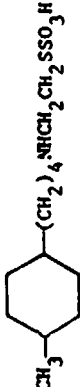
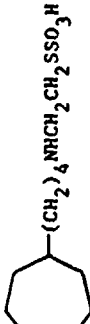
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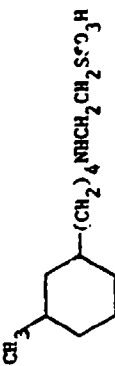
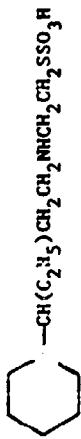
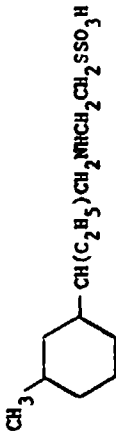
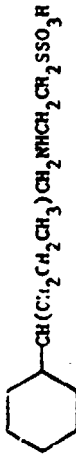
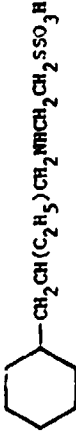
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{24}N_2S$	43895		1	32	0			92
$C_{13}H_{24}N_2O_3PS$	108530		42	120	0			54,243
$C_{13}H_{25}NO_2S$	2110			500	0			26
$C_{13}H_{25}NO_3S_3S_1$	108417			25	+(T).0			244
$C_{13}H_{25}NO_3S_3S_1$	122160			5	0			244

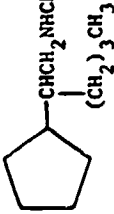
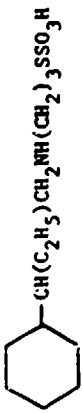
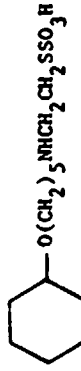
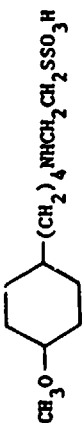
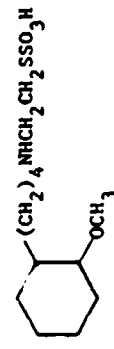
Molecular Formula	WR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{25}NO_3S_3Si$	131155			35 10	+,+ +,+	250	0	244
$C_{13}H_{25}NS$	36162		1	20	0			324
$C_{13}H_{25}NS$	36954		1	40	0	200	±,0	324
$C_{13}H_{25}NS_2$	1505			400	0(T),0(T)			12
$C_{13}H_{25}NS_2Si$	42758			50	0			292

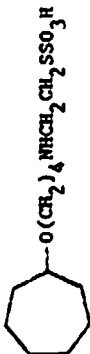
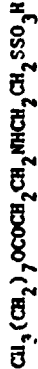
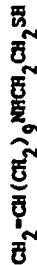
463

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/kg	Rating	
$C_{13}H_{25}N_3O_2S$	25879			75	0			225
$C_{13}H_{25}N_3S$ 464	48679		7	50	0			223
$C_{13}H_{26}N_2O_2S_2$	2188	$CH_3(CH_2)_7NHCOCH_2CH_2SC(O)SCH_3$		1000	0			146
$C_{13}H_{26}N_2S$	3428		1	10	0(T), 0			83
$C_{13}H_{26}N_2S$	62461			320	0			11

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{27}NO_2S$	94535			80	0			157
$C_{13}H_{27}NO_2S$	2095	$CH_3(CH_2)_9NHCH(COOH)CH_2SH$		500	0(T), 0(T)			26
$C_{13}H_{27}NO_3S_2$	2906			5	0			226, 293
$C_{15}H_{27}NO_3S_2$	3238			5	+, +, 0	800	+	192, 293
$C_{13}H_{27}NO_3S_2$	3302			10	+, +	800	+	226, 293
$C_{13}H_{27}NO_3S_2$	3561			5	+, 0	1500	0	226, 293

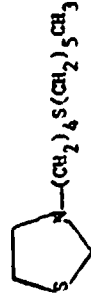
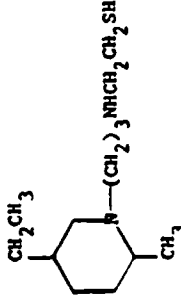
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{27}NO_3S_2$	3824			5	+, +, 0		226, 293	
$C_{13}H_{27}NO_3S_2$	6136			50	+, +, +, 0		226, 293	
$C_{13}H_{27}NO_3S_2$	6402			100	+, +, +, ±	1000	0	226, 293
$C_{13}H_{27}NO_3S_2$	6403			40	+, +, +, 0	1000	0	226, 293
$C_{13}H_{27}NO_3S_2$	6404			150	0			226, 293
$C_{13}H_{27}NO_3S_2$	7466			50	+, +, +, 0	1600	0	226, 293

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{27}NO_3S_2$	9096			50	+ , 0		226,293	
$C_{13}H_{27}NO_3S_2$	54205			80	±(T), 0		324	
$C_{13}H_{27}N_4S_2$	2857		57	80	0		199	
$C_{13}H_{27}NO_4S_2$	2973			75	±(T), + , 0	600	±	226,286
$C_{13}H_{27}NO_4S_2$	3236			50	± , 0	800	0	226,293
$C_{13}H_{27}NO_4S_2$	2614			50	± , + , 0	750	±(T)	226,293

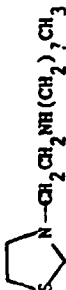
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{27}NO_4S_2$	4444			75	+(T), 0			226, 286
$C_{13}H_{27}NO_4S_2$	4445			50	+(T), ±	800	0(T)	226, 286
$C_{13}H_{27}NO_5S_2$	9071			200	0			165, 242
$C_{13}H_{27}NS$	2872	 <u>trans</u>	6	50	0			152
$C_{13}H_{27}NS$	2950		1	50	+(T), +, 0	100	+	174
$C_{13}H_{27}NS$	5987		1	15	0			121

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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{27}NS$	33715		1	25 0		150 0		324
$C_{13}H_{27}NS$	36957		1	40 S(T)				324
$C_{13}H_{27}NS$	39742		1	50 0				144
$C_{13}H_{27}NS_2$	154978		1	50 0		300 $\pm, 0$		298
$C_{13}H_{27}NS_2$	156716		1	100 0		400 $\pm, 0$		298
$C_{13}H_{27}NS_2$	157311		1	100 +(T) $\pm, 0$		250 $\pm, \pm, \pm$		298

Molecular Formula	U ⁿ Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₃ H ₂₇ NS ₂	157841		1	100 0		300 +,0		298
C ₁₃ H ₂₇ NS ₂	166836		1	60 ±,0		300 +(T), ±		148
C ₁₃ H ₂₇ N ₃ O ₆ S ₂	2228	$\begin{array}{c} \text{H}_2\text{NCH}_2\text{CH}_2\text{O} \\ \\ (-\text{CH}_2\text{CHCH}_2\text{CH}-)_n \\ \\ \text{OCH}_2\text{CH}_2\text{NHCOCH}_2\text{CH}_2\text{NHCH}_2\text{CH}_2\text{SSO}_3\text{H} \end{array}$		60 0				23
C ₁₃ H ₂₈ NO ₅ PS	9063	CH ₃ (CH ₂) ₇ OCOCH ₂ CH ₂ NHCH ₂ CH ₂ SPO ₃ H ₂		50 0				165,243
C ₁₃ H ₂₈ N ₂ OS	94541	CH ₃ (CH ₂) ₉ CHORCH ₂ SC(=NH)NH ₂	40	30 0				157
C ₁₃ H ₂₈ N ₂ S	2310		2	50 0				124

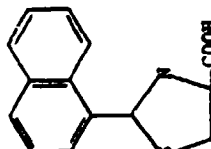
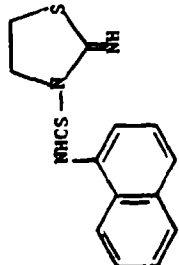
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Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{28}N_2S$	151356		2	10 0	75 0		148	
$C_{13}H_{28}N_2S_2$	162452	$CH_2(CH_2)_{11}SSC(=NH)NH_2$	1	200 0(T), 0	500 0		11	
$C_{13}H_{28}N_2S_3$	159080	$[CH_3(CH_2)_3NHCH_2CH_2S]_2CS$	28	60 +, 0	500 0(T), +		19	
$C_{13}H_{28}N_4O_4S_2$	25899	$(CH_3)_3CNHCONHN=C(CH_3)CH_2C(CH_3)_2NHCH_2CH_2SSO_3H$		300 0(T), 0			165, 242	
$C_{13}H_{29}NO_2S$	2234	$CH_2(CH_2)_9OCH_2CHOHCH_2NHCH_2CH_2SH$	1	50 0			211	
$C_{13}H_{29}NO_2S$	29005	$HOCH_2CHOH(CH_2)_9NHCH_2CH_2SH$	1	100 +, 0			121	
$C_{13}H_{29}NO_3S$	2539	$HOCH_2(CH_2)_9OCH_2CHOHCH_2NHCH_2CH_2SH$	1	200 0			103, 104, 199	
$C_{13}H_{29}NO_3S_2$	1473	$CH_3(CH_2)_9CH(CH_2NH_2)CH_2SSO_3H$		600 0			162	
$C_{13}H_{29}NO_3S_2$	2007	$CH_3(CH_2)_9NHCH(CH_3)CH_2SSO_3H$		100 0			11	
$C_{13}H_{29}NO_3S_2$	2111	$CH_3(CH_2)_{10}NHCH_2CH_2SSO_3H$		5 0			161, 239	

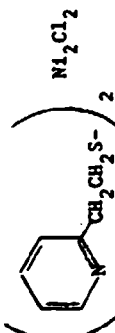
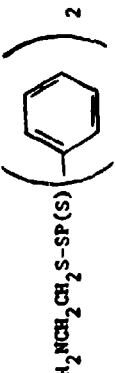
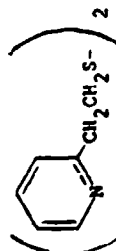
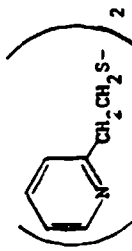
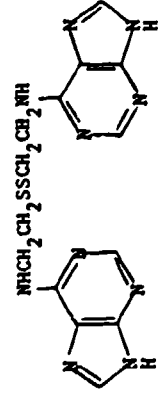
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{29}NO_3S_2$	2411	$CH_3(CH_2)_8CH(CH_3)NHCH_2CH_2SSO_3H$		10	+0	500	0	161,239
$C_{13}H_{29}NO_3S_2$	2868	$CH_3(CH_2)_9NHCH_2CH_2SCH_2SO_3H$		5	+0			312
$C_{13}H_{29}NO_3S_3$	157842	$CH_3(CH_2)_5S(CH_2)_5NHCH_2CH_2SSO_3H$		10	+0			148
$C_{13}H_{29}NO_4S_2$	152912	$CH_3(CH_2)_9NHCH_2CH(OH)CH_2SSO_3H$		15	+0	100	0	58
$C_{13}H_{29}NO_4S_2$	159244	$CH_3(CH_2)_5O(CH_2)_5NHCH_2CH_2SSO_3H$		20	+±			148
$C_{13}H_{29}NO_5S_2$	3024	$HOCH_2(CH_2)_8CH(OH)CH_2NHCH_2CH_2SSO_3H$		250	0			226
$C_{13}H_{29}NO_5S_2$	27748	$HOCH_2CH(OH)(CH_2)_9NHCH_2CH_2SSO_3H$		200	0			121
$C_{13}H_{29}NS$	1549	$CH_3(CH_2)_{10}NHCH_2CH_2SH$	1	30	+(T)			102
$C_{13}H_{29}N_3O_3S_2$	4440	$CH_3(CH_2)_9NCH_2CH_2SSO_3H$ $C(=NH)NH_2$		15	0			315
$C_{13}H_{29}N_3S$	3150	$CH_3(CH_2)_9NHC(=NH)SCH_2CH_2NH_2$	7	20	0			12
$C_{13}H_{29}N_3S$	4436	$CH_3(CH_2)_9NCH_2CH_2SH$ $C(=NH)NH_2$	24	10	0(T),0			315
$C_{13}H_{29}N_4O_4PS$	25902	$(CH_3)_3CNHCONH-C(CH_3)_2CH_2C(CH_3)_2NHCH_2CH_2SPO_3H_2$		200	0			165,243

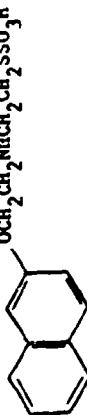
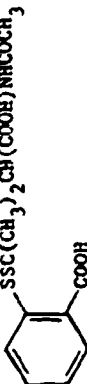
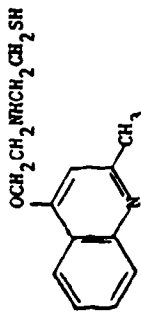
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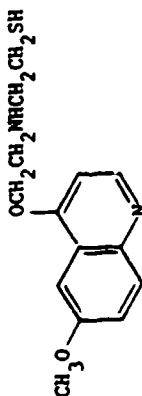
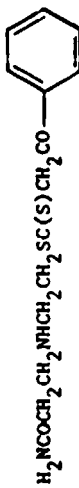
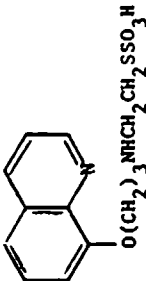
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{13}H_{30}NO_3PS_2$	158493	$CH_3(CH_2)_5(CH_2)_5NHCH_2CH_2SPO_3H_2$	57	50	+,-	200	+,-0	148
$C_{13}H_{30}NO_4PS$	152914	$CH_3(CH_2)_9NHCH_2CHOHCH_2SPO_3H_2$	54	25	0	200	0	58
$C_{13}H_{30}N_2OS$	2405	$HOCH_2CH_2NH(CH_2)_9NHCH_2CH_2SH$	2	75	0(T),0			103,104,108
$C_{13}H_{30}N_2O_2S_2$	2750	$HSCCH_2CH_2NH(CH_2)_6OCH_2CHOHCH_2NHCH_2CH_2SH$	2	20	0			103,104,199
$C_{13}H_{30}N_2O_3S_2$	9716	$CH_3(CH_2)_7NH(CH_2)_3NHCH_2CH_2SSO_3H$	41	50	0(T),0			169
$C_{13}H_{30}N_2O_6S_4$	104725	$H_2C(CH_2CH_2CH_2NHCH_2CH_2CH_2SSO_3H)_2$		26	0			270
$C_{13}H_{30}N_2S$	1755	$H_2N(CH_2)_{11}NHCH_2CH_2SH$	2	50	0			207
$C_{13}H_{30}N_2S_2$	2239	$HSCCH_2CH_2NH(CH_2)_9NHCH_2CH_2SH$	2	20	0			211
$C_{13}H_{31}N_2O_3PS$	9369	$CH_3(CH_2)_7NH(CH_2)_3NHCH_2CH_2SPO_3H_2$		125	+,-0			154,169
$C_{13}H_{32}N_2O_6P_2S_2$	108509	$H_2O_3PS(CH_2)_3NH(CH_2)_7NH(CH_2)_3SPO_3H_2$		9	0			270

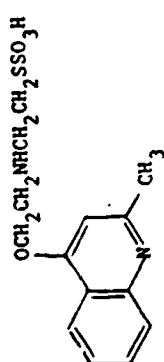
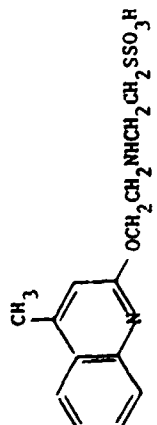
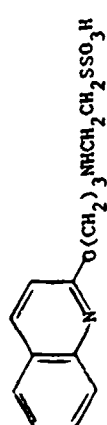
Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{12}N_2OS$	81581			60	0			11
$C_{14}H_{13}ClN_2O_2S_2$	6132			100	0, ±			129
$C_{14}H_{13}NO_2S$	176353		1	300	0(T), ±			318
$C_{14}H_{13}N_3S_2$	33587			800	0			11

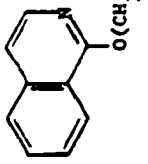
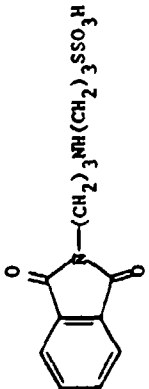
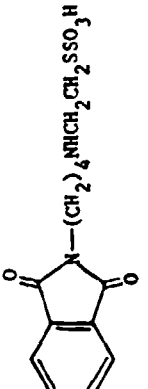
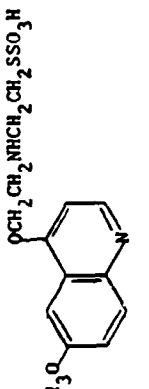
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{14}N_4O_2S_2$	1833			100	0			212
$C_{14}H_{14}O_2S_2$	628			250	0(T), 0(T)			316
$C_{14}H_{14}S_3$	4700			180	0			173
$C_{14}H_{14}IN_2S$	75615			32	0			11
$C_{14}H_{15}NO_5S$	7767		1	500	±0			121
$C_{14}H_{15}N_3O_2S$	682		6	60	0			63

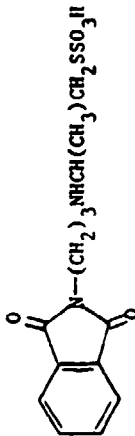
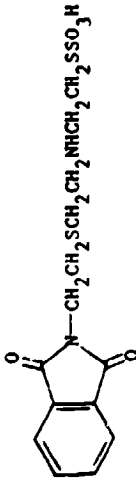
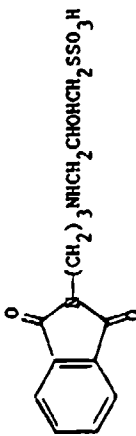
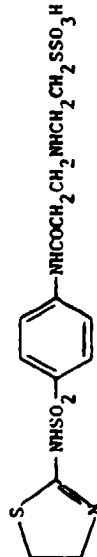
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{16}Cl_2N_4S_2$	2222			19	0			272
$C_{14}H_{16}NPS_3$ 476	186675		1	10	0	600	$\pm$.0	70
$C_{14}H_{16}N_4S$	2223			59	0			272
$C_{14}H_{16}N_2PdS_2$	2232			200	0			272
$C_{14}H_{16}N_{10}S_2$	83			1200	0			170

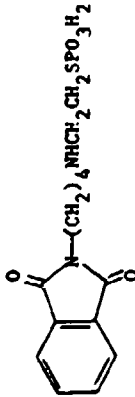
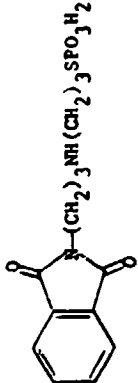
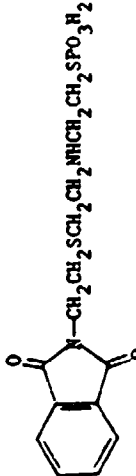
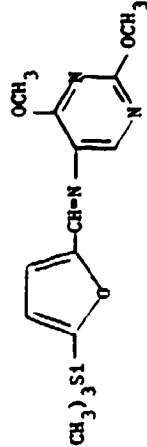
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{17}F_6N_3OS$	98116		27	160 0				54,240
$C_{14}H_{17}NO_4S_2$	4543			25 0				295
$C_{14}H_{17}NO_5S_2$	142071			100 0		600 0		333
$C_{14}H_{17}N_3OSSl$	90188			50 0				244
$C_{14}H_{18}N_2OS$	37675		2	150 0				99

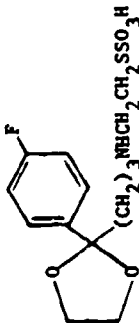
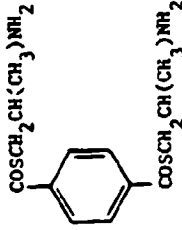
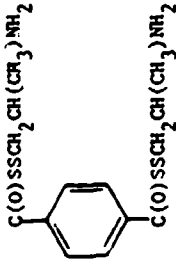
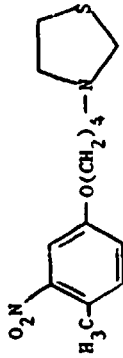
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		F.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{14}H_{18}N_2O_2S$	91486	 <chem>NCc1ccccc1OCC2=CC=CC=C2SCC3=CC=CC=C3</chem>	17	200 ± 0			54,240	
$C_{14}H_{18}N_2O_2S$	98079	 <chem>NCc1ccc2c(c1)ncnc2SCC3=CC=CC=C3</chem>	1	180 0			99	
$C_{14}H_{18}N_2O_2S_2$	183327	 <chem>NCc1ccccc1OCC2=CC=CC=C2SCC3=CC=CC=C3</chem>	17	75 ± 0	200 0		70	
$C_{14}H_{18}N_2O_3S$	193688	 <chem>NCc1ccccc1OCC2=CC=CC=C2SCC3=CC=CC=C3</chem>		100 0	500 0		120	
$C_{14}H_{18}N_2O_4S_2$	9463	 <chem>NCc1ccccc1OCC2=CC=CC=C2SCC3=CC=CC=C3</chem>		100 0(T) 0			291	

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating .	
$C_{14}H_{18}N_2O_4S_2$	25930			100	0			310
$C_{14}H_{18}N_2O_4S_2$	38488			560	0			99
$C_{14}H_{18}N_2O_4S_2$	104700			140	0			224
$C_{14}H_{18}N_2O_4S_2$	106156			100	±, ±, ±, 0			157,224

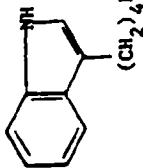
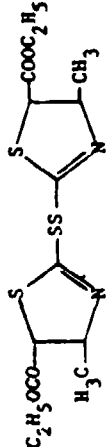
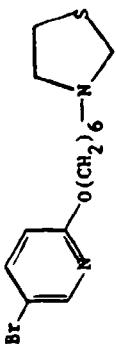
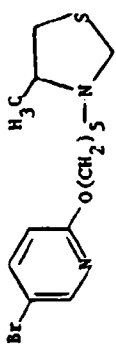
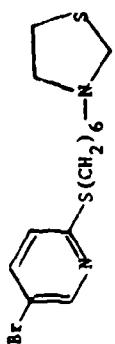
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{18}N_2O_4S_2$	117932			80	0			157,224
$C_{14}H_{18}N_2O_5S_2$	40343			180	0(T),0			306
$C_{14}H_{18}N_2O_5S_2$	90200			70	0			306
$C_{14}H_{18}N_2O_5S_2$	98075			400	0			99

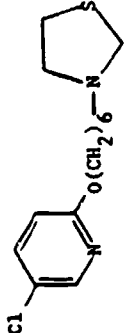
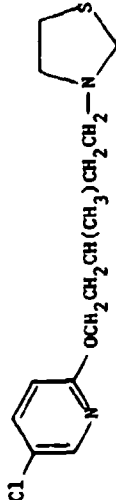
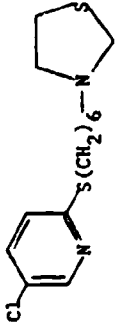
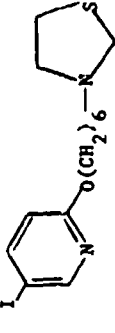
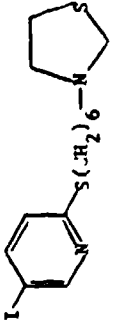
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{18}N_2O_5S_2$	136220			100	0			306
$C_{14}H_{18}N_2O_5S_3$	114395			200	0			306
$C_{14}H_{18}N_2O_6S_2$	148657			300	0			188
$C_{14}H_{18}N_4O_6S_4$	75233			800	0			92

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{19}N_2O_5PS$	51989		47.57	60	0			306
$C_{14}H_{19}N_2O_5PS$	80857		42	80	0			306
$C_{14}H_{19}N_2O_5PS_2$	121225		46.57	120	0			306
$C_{14}H_{19}N_3O_3S_1$	90187			440	0			246

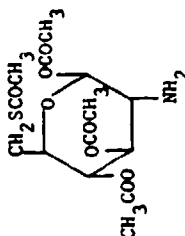
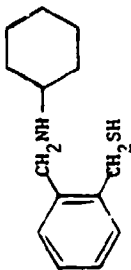
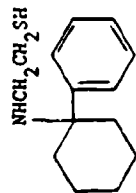
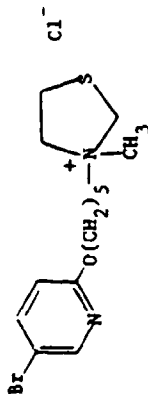
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{20}FNO_5S_2$	3304			75	0			226
$C_{14}H_{20}N_2O_5S_2$	175880		28	200	+,-,0	900	+,-,0	71
$C_{14}H_{20}N_2O_5S_4$	175811		2	75	+,-,0	250	0	71
$C_{14}H_{20}N_2O_5S_3$	145722		1	50	0	300	+(T),0	43

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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{20}N_2O_3S_2$	3609			150	0(T), 0			295
$C_{14}H_{20}N_2O_4S_4$	2889			800	0			12
$C_{14}H_{21}BrN_2OS$	91496		1	100	$+, \pm$	300	$+, \pm$	224
$C_{14}H_{21}BrN_2OS$	94529		1	250	0			224
$C_{14}H_{21}BrN_2S_2$	162863		1	200	$+, \pm$	400	$+, \pm$	298

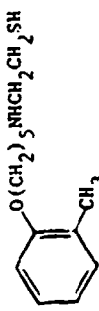
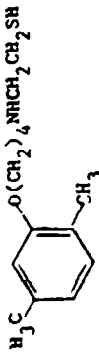
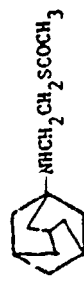
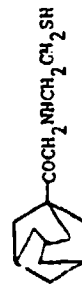
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{21}ClN_2OS$	108503		1	75	$+, \pm$	300	$+, +, \pm$	224
$C_{14}H_{21}ClN_2OS$	159620		1	100	0	150	$\pm, 0$	148, 224
$C_{14}H_{21}ClN_2S_2$	132194		1	100	$+, 0$	300	$+, +, 0$	298
$C_{14}H_{21}IN_2OS$	132197		1	50	$\pm, 0$	300	$+, \pm, \pm$	224
$C_{14}H_{21}IN_2S_2$	152925		1	125	$+, 0$	250	$+, \pm$	298

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{21}NOS$	34142		1	50	+			324
$C_{14}H_{21}NOS$	38490		1	80	+, +, 0	200	+ 0	144, 92, 43
$C_{14}H_{21}NOS$	122957		1	60	0			157
$C_{14}H_{21}NO_3S_2$	1255			800	0			99
$C_{14}H_{21}NO_8S$	704		6	500	0			182

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{21}NO_8S$	1131		1	1000	0			334
$C_{14}H_{21}NS$	1179		1	46	0			99
$C_{14}H_{21}NS$	2398		1	30	0			124
$C_{14}H_{22}BrClN_2OS$	104697			8	0			157, 224

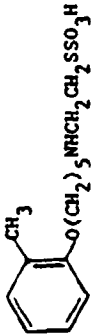
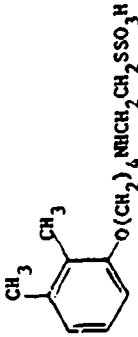
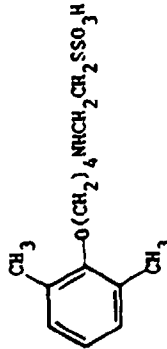
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{14}H_{22}NO_3PS$	6262			40	0			165, 243
$C_{14}H_{22}N_2OS$	94538		2	70	+C	375	+(T)	224
$C_{14}H_{22}N_2OS_2$	132193		2	60	0	300	0	224
$C_{14}H_{22}N_2OS_2$	181182		27	50	0	300	0	70
$C_{14}H_{22}N_2O_2S$	2015			1600	0			35

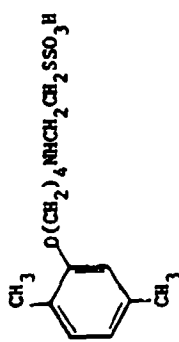
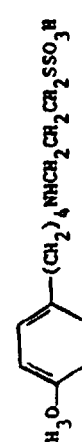
489

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{23}NOS$	32997		1	56	$\pm, \pm$			324
$C_{14}H_{23}NOS$	36160		1	40	0			144
$C_{14}H_{23}NOS$	74056		27	80	$\pm, 0$			240
$C_{14}H_{23}NOS$	151322		6	150	$\pm, \pm$	500	$\pm, 0$	188
$C_{14}H_{23}NO_3S_2$	3313			25	$\pm(T), \pm$			239, 287, 181

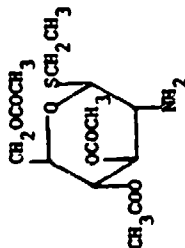
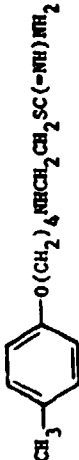
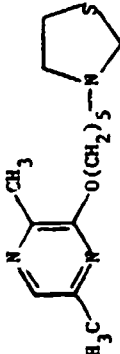
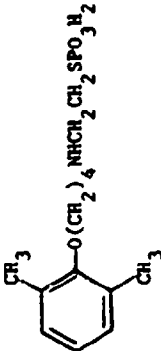
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{23}NO_3S_2$	3337			10	+0	1000	0	226,285
$C_{14}H_{23}NO_3S_2$	3340			15	+0	1000	0	226,285
$C_{14}H_{23}NO_3S_2$	3342			5	+0	500	+(T)	226,285
$C_{14}H_{23}NO_4S_2$	3147			500	+			12

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{23}NO_4S_2$	3336			10	+,-	1000	0	226,294
$C_{14}H_{23}NO_4S_2$	3343			30	+,-	1000	0	226,294
$C_{14}H_{21}NO_4S_2$	3565			5	0			294,295
$C_{14}H_{23}NO_4S_2$	3821			50	0			226,294
$C_{14}H_{23}NO_4S_2$	4103			15	+(T), ±	800	±	226,285

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{23}NO_4S_2$	4546			70	+, +, +, ±	2000	0	226, 294
$C_{14}H_{23}NO_4S_2$	4548			30	+(T), +, 0	1000	0	226, 285
$C_{14}H_{23}NO_4S_2$	4769			15	+(T), +, 0	1000	0	226, 294
$C_{14}H_{23}NO_4S_2$	4788			100	+, +, +, ±	1400	0	226, 294

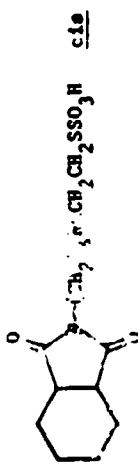
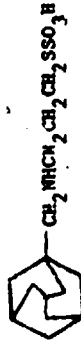
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{23}NO_4S_2$	4805			30 +,-		1500	0	226,294
$C_{14}H_{23}NO_4S_2$	54207			70	0(T), 0			92
$C_{14}H_{23}NO_4S_2$	75237			100	0			92
$C_{14}H_{23}NO_4S_2$	75238			400	0(T), 0			92
$C_{14}H_{23}NO_4S_2$	148768			250	0			188

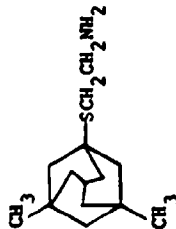
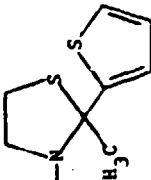
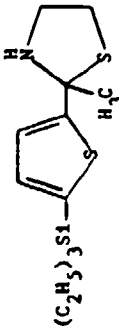
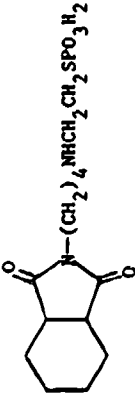
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{23}NO_5S_3$	6137			50	+,-,0			226,294
$C_{14}H_{23}NO_5S_2$	3338			150	±,0			226,285
$C_{14}H_{23}NO_5S_2$	25875			100	±,0			226
$C_{14}H_{23}NO_5S_3$	6128			150	0			183
$C_{14}H_{23}NO_5S_3$	9051			110	0			307
$C_{14}H_{23}NO_6S_2$	3072			100	0			226

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{23}NO_7S$	2728			1000	0			335
$C_{14}H_{23}N_3OS$	39747		2	50	0			144
$C_{14}H_{23}N_3OS$	43896		2	180	0			92
$C_{14}H_{24}NO_4PS$	117914			60	0			157

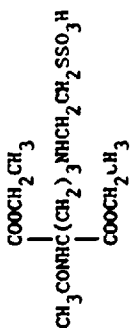
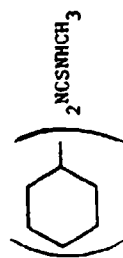
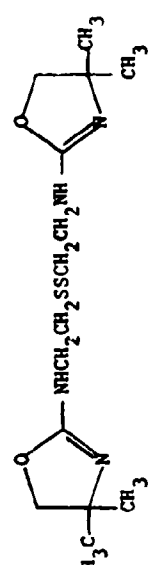
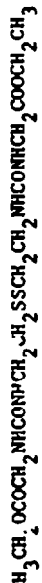
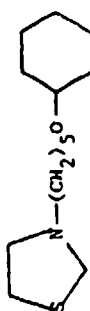
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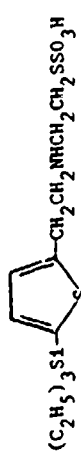
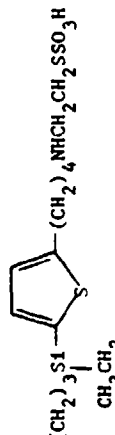
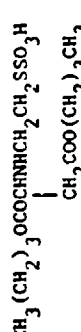
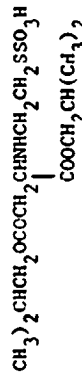
Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{24}NO_4PS$	149847		57	100	+ (T), 0	450	0 (T), 0	188
$C_{14}H_{24}N_2O_3S_6$	753			750	0			259
$C_{14}H_{24}N_2O_3S_2$	157075			10	+ 0	600	0 (T), 0	98, 299
$C_{14}H_{24}N_2O_3S_2$	199271			5	+ 0	200	0 (T), 0	269
$C_{14}H_{24}N_2O_3S_3$	159942			5	0	75	+ 0	311
$C_{14}H_{24}N_2O_3S_3$	193687			5	+ 0	100	0 (T), 0	126
$C_{14}H_{24}N_2O_3S_2$	145040			30	+ 0	400	+ 0	299, 311

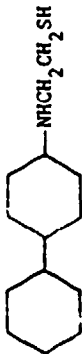
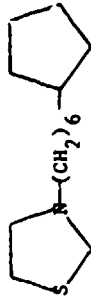
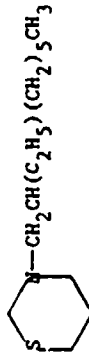
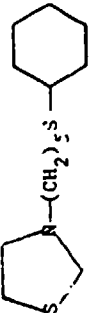
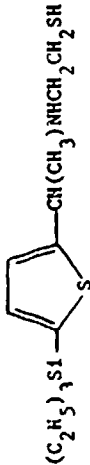
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{24}N_2O_5S_2$	104722			80	0			256
$C_{14}H_{25}NOS$	156796		5	40	+(T), ±	50	±, 0	188
$C_{14}H_{25}NO_3S_2$	142077			15	0	600	0	188
$C_{14}H_{25}NO_3S_2$	148666			200	0			188
$C_{14}H_{25}NO_4S_2$	165561			100	0	600	0	206
$C_{14}H_{25}NO_4S_2$	171873			60	0			58
$C_{14}H_{25}NOS$	142075		6	25	±, 0	100	±	188

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{25}NS$	179213			25	0	300	0	265
$C_{14}H_{25}NS_2S1$	34426			200	0			292
$C_{14}H_{25}NS_2S1$	39068			1000	0			292
$C_{14}H_{25}N_2O_5PS$	108512		45,57	80	0			256

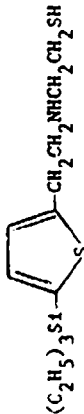
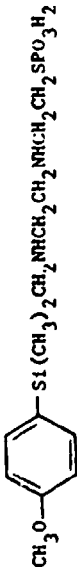
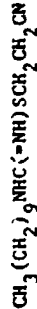
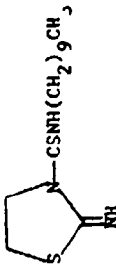
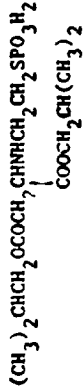
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{26}ClNO_4S$	50487			60	0			92
$C_{14}H_{26}N_2O_3PS$	142076		46	35	+(T), 0	150	0	188
$C_{14}H_{26}NO_4PS$	165560		57	60	+, 0			206
$C_{14}H_{26}NO_4PS$	171872		53			150	0	58
$C_{14}H_{26}N_2O_2S_4$	2713			100	0			208
$C_{14}H_{26}N_2O_3S_3$	204159			5	+, 0	200	0(T), 0(T), 0	120

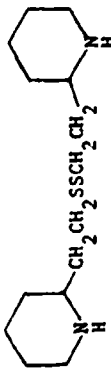
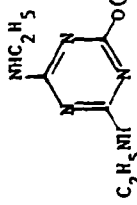
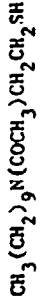
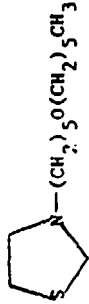
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{26}N_2O_8S_2$	159560			200	0(T), 0			230
$C_{14}H_{26}N_2S$	102231			800	0(T), 0			11
$C_{14}H_{26}N_2C_2S_2$	850			35	0			41
$C_{14}H_{26}N_2O_6S_2$	1998			800	0			20
$C_{14}H_{27}NOS$	138419		1	70	+0	200	±	324

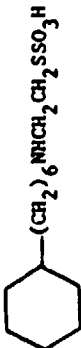
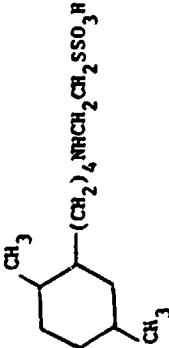
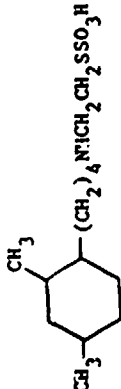
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{27}NO_5S_3$	76735			20	0			244
$C_{14}H_{27}NO_5S_3$	132921			15	0(T), 0			244
$C_{14}H_{27}NO_7S_2$	3681			100	0(T), 0			56, 244
$C_{14}H_{27}NO_7S_2$	4486			500	0			56, 244

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{27}NS$	2392		1	50	0			124
$C_{14}H_{27}NS$	3616		1	25	+0	80	+,-	324
$C_{14}H_{27}NS$	39492		1,41	100	0			324
$C_{14}H_{27}NS$	61133		1	100	0			92
$C_{14}H_{27}NS_2$	146174		1,42	60	+0	300	+	43
$C_{14}H_{27}NS$	39067			800	0			292

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Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose mg/Kg	Rating	Dose mg/Kg	Rating	
$C_{16}H_{27}NS_2Si$	90185		1	30	±, 0			244
$C_{14}H_{27}N_2O_3PS$	169402		44	8	0	20	0	71, 243
$C_{14}H_{27}N_2O_4PSS_1$	136905			70	0(T), 0	400	0	244
$C_{14}H_{27}N_3S$	3151		6	50	0			12
$C_{14}H_{27}N_3S_2$	62460			150	0			11
$C_{14}H_{28}NO_7PS$	4482			700	0			56, 243

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{28}N_2S_2$	1114		2	14	0			143
$C_{14}H_{28}N_2S_3$	183368		28	50	0			70
$C_{14}H_{28}N_2O_4S_2$	2870			400	0			132
$C_{14}H_{28}N_2O_4S_2$	122965			50	0			6
$C_{14}H_{29}NOS$	3539			100	0			195
$C_{14}H_{29}NOS$	158494		1	65	+0	175	+0	148

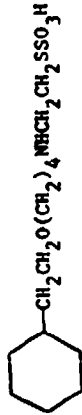
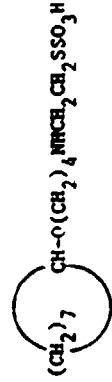
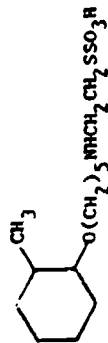
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{29}NO_2S_2$	157087	$H_2NCH(CH_3)CH_2S-S-COO(CH_2)_9CH_3$	1	50	0			19
$C_{14}H_{29}NO_2S_2$	157088	$CH_3(CH_2)_9NHCH_2CH_2S-S-COOCH_3$	1	15	0(T), +, 0			19
$C_{14}H_{29}NO_3S_2$	2866			5	+, 0			226, 293
$C_{14}H_{29}NO_3S_2$	3339			15	+, ±			226, 293
$C_{14}H_{29}NO_3S_2$	3558			3	0			226, 293
$C_{14}H_{29}NO_3S_2$	3564			20	+(T), ±			226, 293

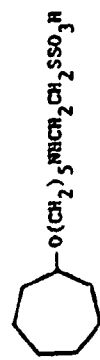
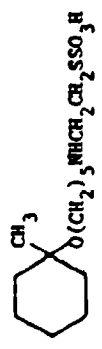
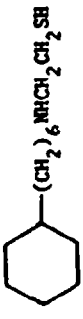
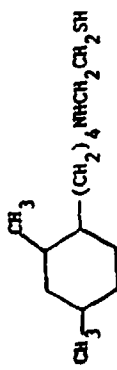
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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{29}NO_3S_2$	4107			5	0			226,293
$C_{14}H_{29}NO_3S_2$	5984			5	+,0	1200	0(T)	226,293
$C_{14}H_{29}NO_3S_2$	6400			25	+,0	1000	0	226,293
$C_{14}H_{29}NO_3S_2$	7467			30	+,+,+,+,+	500	0	226,293
$C_{14}H_{29}NO_3S_2$	25212			75	0			239

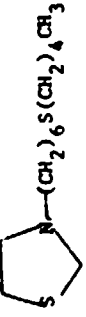
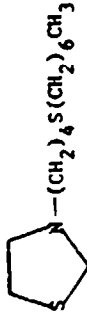
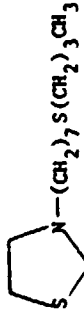
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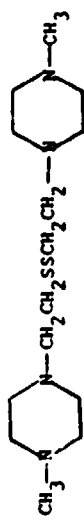
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{29}NO_3S_2$	68815			150	0			324
$C_{14}H_{29}NO_3S_2$	71471			180	+0			92

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{29}NO_3S_2$	133569			35 $\pm$				223
$C_{14}H_{29}NO_4S_2$	2850	$CH_3(CH_2)_9N(COCH_3)CH_2CH_2SSO_3H$	57	69 0				199
$C_{14}H_{29}NO_4S_2$	2990			20 $\pm$				226, 286
$C_{14}H_{29}NO_4S_2$	3567			12 $\pm$				226, 286
$C_{14}H_{29}NO_4S_2$	3610			15 $\pm$				226, 286
$C_{14}H_{29}NO_4S_2$	4446			100 $\pm$	$\pm$ (T) $\pm$ $\pm$ 0			226, 286
$C_{14}H_{29}NO_4S_2$	4538			30 $\pm$ (T) $\pm$ (T) 0				226, 286

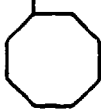
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{29}NO_4S_2$	4540			12 $\pm$ 0				226,286
$C_{14}H_{29}NO_4S_2$	4542			25 $\pm$ 0				226,286
$C_{14}H_{29}NO_4S_2$	4781			25 $\pm$ 4		800 0		226,286
$C_{14}H_{29}NS$	2468		1	30 0				124
$C_{14}H_{29}NS$	2576		1	30 $\pm$ 0		250 0		124
$C_{14}H_{29}NS$	34140		1	15 $\pm$				324

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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{29}NS_2$	134783		1	30 +,0		250 +,+,±		298
$C_{14}H_{29}NS_2$	136179		1	50 0		400 +,±,0		298
$C_{14}H_{29}NS_2$	156718		1	100 0		300 0		298
$C_{14}H_{29}NS_2$	157072		1	80 +,±		200 +,±,0		148
$C_{14}H_{29}NS_2$	157073		1	80 +,±		300 ±(T),0		298
$C_{14}H_{29}NS_2$	157312		1	80 +,±,0		300 +(T),0		298
$C_{14}H_{29}N_2O_3PS$	74126	$(CH_3)_2C=CHCH_2CH_2C(CH_3)=CHCH_2NHCH_2CH_2NHCH_2CH_2SPO_3H_2$	77	56 0				145,243
$C_{14}H_{29}N_3S_3$	2459	$CH_3(CH_2)_3NHCSCH_2CH_2NHC(SCH_2CH_3)=N(CH_2)_3CH_4$	6	30 0				14

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{30}NO_3PS$	133567		46,57	30 0				223
$C_{14}H_{30}N_2O_3S_2$	2060	$CH_3(CH_2)_9N=C(CH_3)NHCH_2CH_2SSO_3H$		30 0				96
$C_{14}H_{30}N_2S_2$	94539		2	50 0				157
$C_{14}H_{30}N_4O_2S_2$	2075	$CH_3(CH_2)_3NHCOHCH_2CH_2SSCH_2CH_2NHCOH(CH_2)_3CH_3$		800 0				20
$C_{14}H_{30}N_4O_2S_2$	9725	$CONH(CH_2)_4NHCH_2CH_2SR$ $CONH(CH_2)_4NHCH_2CH_2SH$	2	2.50 0				325
$C_{14}H_{30}N_4O_8S_4$	28446	$HOSSCH_2CH_2NH(CH_2)_4NHCOCONH(CH_2)_4NHCH_2CH_2SSO_3H$		100 0(T), 0				325
$C_{14}H_{30}N_4S_2$	177479		4	80 +, 0		600 0		129

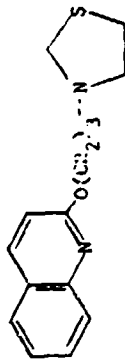
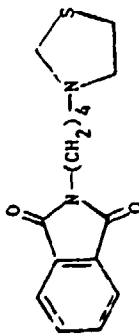
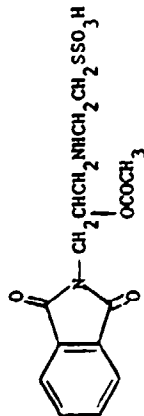
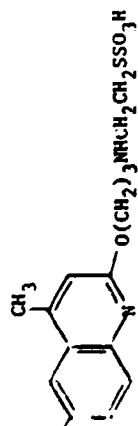
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₄ H ₃₀ O ₂ S ₂	1911	HOCH ₂ CH ₂ S(CH ₂) ₁₀ SCH ₂ CH ₂ OH		200	0			12
C ₁₄ H ₃₁ NOS	1898	CH ₃ (CH ₂) ₉ CHOHCH ₂ NHCH ₂ CH ₂ SH	1	50	0			103, 104, 287
C ₁₄ H ₃₁ NOS	2421	CH₂CH₂OH CH₃(CH₂)₉N CH₂CH₂SH		200	0(T).0			12
C ₁₄ H ₃₁ NO ₂ S ₃	108571	CH ₃ (CH ₂) ₇ NHCH ₂ CH ₂ SS(CH ₂) ₄ SO ₂ H		200	0			197
C ₁₄ H ₃₁ NO ₃ S ₂	1965	CH ₃ (CH ₂) ₉ NHC(CH ₃) ₂ CH ₂ SSO ₃ H		400	0			109
C ₁₄ H ₃₁ NO ₃ S ₂	2080	CH ₃ (CH ₂) ₁₁ NHCH ₂ CH ₂ SSO ₃ H		5	0			239, 236, 257
C ₁₄ H ₃₁ NO ₄ S ₂	2851	CH ₃ (CH ₂) ₉ N(CH ₂ CH ₂ OH)CH ₂ CH ₂ SSO ₃ H		50	0			199
C ₁₄ H ₃₁ NS	1565	CH ₃ (CH ₂) ₇ NHCH ₂ CH(SH)(CH ₂) ₃ CH ₃		50	0			12
C ₁₄ H ₃₁ NS	1941	CH ₃ (CH ₂) ₉ NHCH ₂ C(CH ₃) ₂ SH	1	37.5	0			193

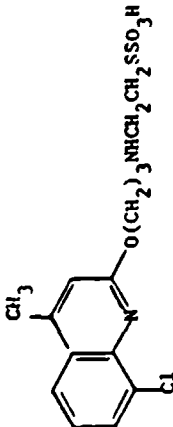
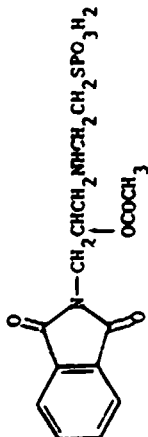
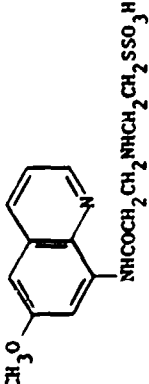
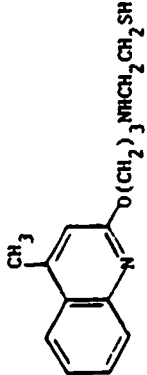
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{31}NS$	2297	$CH_3(CH_2)_{11}NHCH_2CH_2SH$		15 0				211
$C_{14}H_{31}NS_2$	1566	$CH_3(CH_2)_9SCH_2CH_2NHCH_2CH_2SH$		30 0				12
$C_{14}H_{31}N_2O_3PS$	74127	$(CH_3)_2C=CHCH_2CH_2CH(CH_3)CH_2CH_2NHCH_2CH_2NHCH_2CH_2SPO_3H_2$	42	40 0				145,243
$C_{14}H_{31}N_2O_3PS$	80394		42	70 0				145,243
$C_{14}H_{32}NO_3PS$	108538	$CH_3(CH_2)_{11}NHCH_2CH_2SPO_3H_2$		30 +,0		300 0		54,243
$C_{14}H_{32}N_2OS$	2335	$HOCH_2CH_2NH(CH_2)_{10}NHCH_2CH_2SH$	2	75 0				108,211
$C_{14}H_{32}N_2O_2S_2$	39748	$HO(CH_2)_5NHCH_2CH_2SSCH_2CH_2NH(CH_2)_5OH$	2	400 0				144
$C_{14}H_{32}N_2O_3S_2$	2318	$HSCH_2CH_2NH(CH_2)_3OCH_2CH_2OCH_2CH_2O(CH_2)_3NHCH_2CH_2SH$	2	20 0				211
$C_{14}H_{32}N_2O_6S_2$	3606	$HOCH_2CHOHCH_2OCH_2CH_2NHCH_2CH_2S$ $HOCH_2CHOHCH_2OCH_2CH_2NHCH_2CH_2S$	2	1000 +,+				111

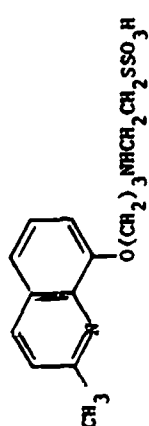
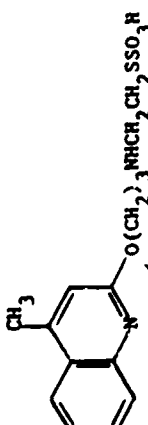
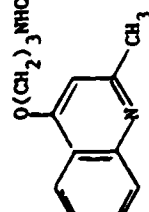
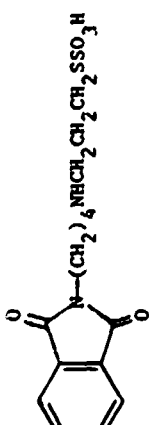
Molecular Formula	WR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{32}N_2O_6S_4$	92969	$HO_3SS(CH_2)_3NH(CH_2)_8NH(CH_2)_3^+SO_3^-H$		200	0(T), 0			270
$C_{14}H_{32}N_2S$	1893	$H_2N(CH_2)_{12}NHCH_2CH_2SH$	1	50	0			207
$C_{14}H_{32}N_2S$	3201	$CH_3(CH_2)_9NHCH_2CH_2NHCH_2CH_2SH$	2	40	0			111
$C_{14}H_{32}N_2S_2$	2384	$HSCH_2CH_2NH(CH_2)_{10}NHCH_2CH_2SH$	2	25	0			211
$C_{14}H_{32}N_6S_2$	2191	$CH_3CH_2CH_2CH_2CH_2[NHC(-NH)NH_2]CH_2CH_2S$ $CH_3CH_2CH_2CH_2CH_2[NHC(-NH)NH_2]CH_2CH_2S$	24	20	0			27
$C_{14}H_{33}NO_3SS1$	150072	$H_2MCH_2CH_2SS1[OC(CH_3)_3]_3$		15	+0			1
$C_{14}H_{33}N_3S$	2237	$H_2N(CH_2)_6NH(CH_2)_6NHCH_2CH_2SH$	3	5	0			211
$C_{14}H_{34}N_2O_6P_2S_2$	35977	$H_2O_3PSCCH_2CH_2NH(CH_2)_{10}NHCH_2CH_2SPO_3H_2$	35	100	0			270
$C_{14}H_{34}N_2O_6P_2S_2$	104731	$P_2O_3PS(CH_2)_3NH(CH_2)_8NH(CH_2)_3SPO_3H_2$		10	0			270

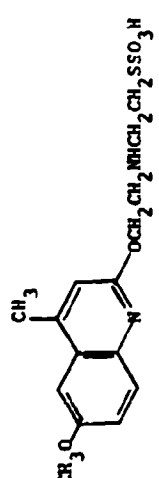
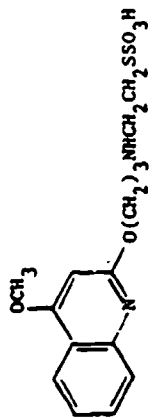
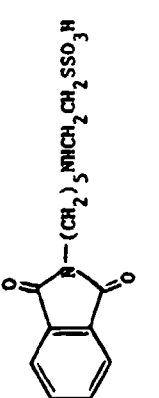
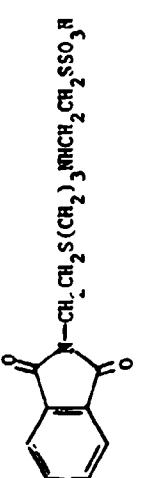
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{14}H_{34}N_4O_2S_2$	3137	$CH_3CHOCH_2NHCH_2CH_2NHCH_2CH_2S$ $CH_3CHOCH_2NHCH_2CH_2NHCH_2CH_2S$	4	200 0			111	
$C_{14}H_{34}N_4O_2S_2$	3157	$HOCH_2CH_2CH_2NHCH_2CH_2NHCH_2CH_2S$ $HOCH_2CH_2CH_2NHCH_2CH_2NHCH_2CH_2S$	4	150 0			111	
$C_{14}H_{34}N_4O_2S_2$	3347	$HOCH_2CHOCH_2NHCH_2CH_2NHCH_2CH_2S$ $HOCH_2CHOCH_2NHCH_2CH_2NHCH_2CH_2S$	4	600 0(T), 0			111	
$C_{14}H_{34}N_4O_6S_4$	5135	$NH(CH_2)_3NHCH_2CH_2SSO_3H$ $(CH_2)_4$ $NH(CH_2)_3NHCH_2CH_2SSO_3H$	7	100 0(T), 0			288	
$C_{14}H_{34}N_4S_2$	8366	$HSCH_2CH_2NH(CH_2)_3NH(CH_2)_4NH(CH_2)_3NHCH_2CH_2SH$	17, 42	10 0			288	
$C_{14}H_{34}N_4S_2$	149024	$H_2N(CH_2)_5NHCH_2CH_2SSCH_2CH_2NH(CH_2)_5NH_2$	4	75 0	300 0		188	

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{17}NO_3S_2$	1254			800	0			99
$C_{15}H_{17}NS$	1183		1					99
$C_{15}H_{17}N_3OS$	98114		27	300	0			54,240
$C_{15}H_{18}N_2OS$	104705		1	50	0			157,226
$C_{15}H_{18}N_2OS$	106160		2	60	0			157

Molecular Formula	VR Number	S-structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{18}N_2OS$	106161		2	60 $\pm$ 0		150 0		224
$C_{15}H_{18}N_2O_2S$	166840		1	50 0		400 0		148
$C_{15}H_{18}N_2O_2S_2$	148656			600 0				188
$C_{15}H_{19}ClN_2O_4S_2$	10854			30 $\pm$ 1		600 0		224

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{19}ClN_2O_4S_2$	120769			10	0			224
$C_{15}H_{19}N_2O_7PS$	148655		44	120	±.0			188
$C_{15}H_{19}N_3O_5S_2$	25330			100	0			144
$C_{15}H_{20}N_2O_5S_2$	61138		2	56	0			92

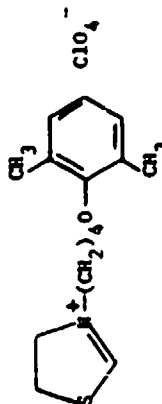
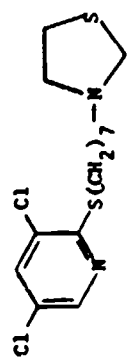
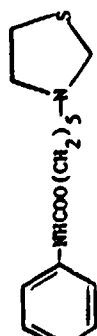
Molecular Formula	WR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{20}N_2O_5S_2$	25885			75	0(T), 0			291
$C_{15}H_{20}N_2O_5S_2$	54204		1	100	+, +, +, ±	400	0	224
$C_{15}H_{20}N_2O_5S_2$	98082			110	0			99
$C_{15}H_{20}N_2O_5S_2$	62940			180	0			306
$C_{15}H_{20}N_2O_5S_2$	114394			200	0			306

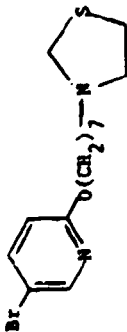
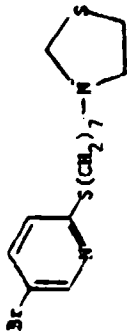
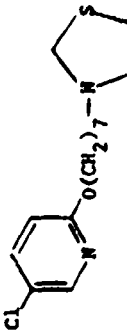
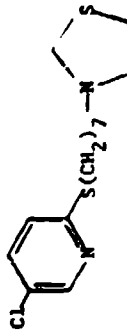
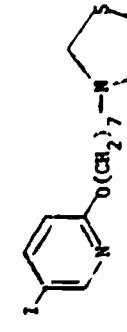
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{20}N_2O_5S_2$	122960			50	+(T), +, +, 0			224
$C_{15}H_{20}N_2O_5S_2$	122968			80	±, ±, 0			224
$C_{15}H_{20}N_2O_5S_2$	148662			100	0			306
$C_{15}H_{20}N_2O_5S_3$	114396			100	0			306

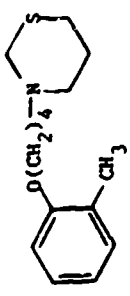
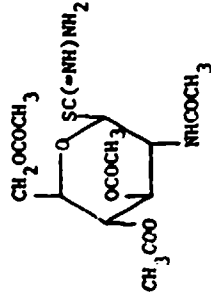
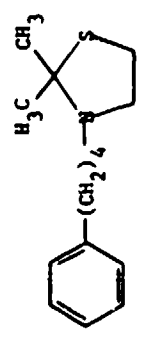
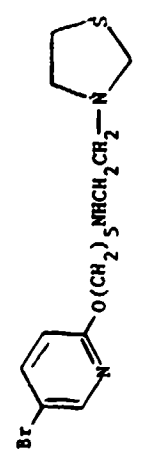
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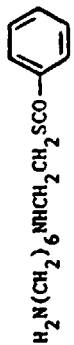
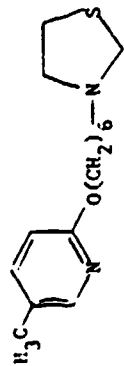
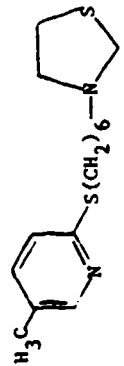
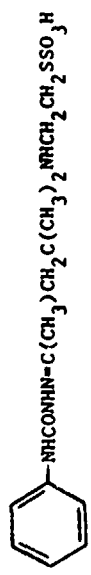
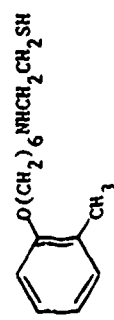
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{20}N_4O_4PS$	33786			1000 0				56,243
$C_{15}H_{20}N_4O_2S$	84135		7.42	70 $\pm$ 0				306
$C_{15}H_{21}NOS_2$	183324		27	150 $\pm$ 0		1000 0		70
$C_{15}H_{21}NO_2S$	193685			400 0		800 0		120
$C_{15}H_{21}NO_3S_2SI$	121448			10 0				244

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{21}N_2O_5PS$	74173			100	0			306
$C_{15}H_{21}N_2O_5PS$	148661			70	0			306
$C_{15}H_{21}N_2O_5PS_2$	121224			100	0			306
$C_{15}H_{21}N_3S_2$	85564		2	100	0			92

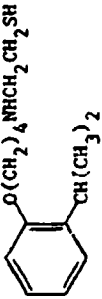
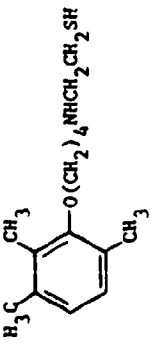
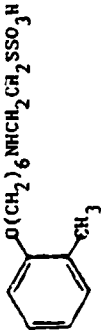
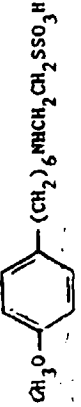
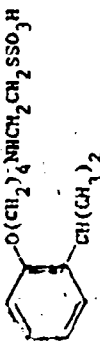
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{22}ClNO_5S$	50488			50 0				92
$C_{15}H_{22}Cl_2N_2S_2$	162818		1	125 0		800 0		298
$C_{15}H_{22}NO_3PSSi$	138775			30 0		200 0		244
$C_{15}H_{22}N_2O_5S$	85567			10 0				92
$C_{15}H_{22}N_3O_3PS$	25881			300 0(T), 0				264

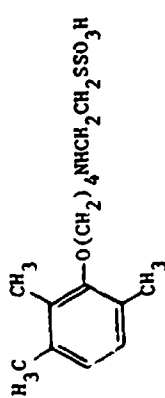
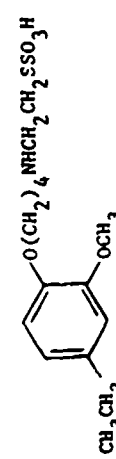
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{23}BrN_2OS$	144975		1	100 +		400	+(T), ±, 0	224
$C_{15}H_{23}BrN_2S_2$	162864		2	75 +, 0		300	+, ±	298
$C_{15}H_{23}ClN_2OS$	144976		1	50 0		200	+, ±	224
$C_{15}H_{23}ClN_2S_2$	158490		1	30 ±, 0		300	+(T), +(T), ±, 0	298
$C_{15}H_{23}IN_2OS$	145724		1	100 ±, 0		600	+(T), 0	224

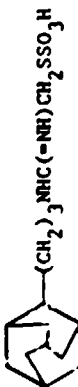
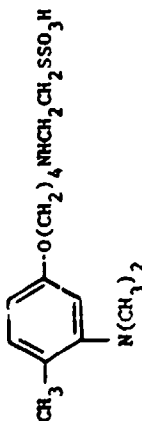
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				I.P.		F.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{23}NO_3S$	61135		1	56	0			92
$C_{15}H_{23}NO_3S_3$	87331			100	0			197
$C_{15}H_{23}N_3O_3S$	1575		1	500	0			331
$C_{15}H_{23}NS$	2304		1	100	0			6
$C_{15}H_{24}BrN_3OS$	151333		2	50	0	200	0	148

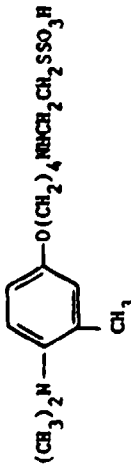
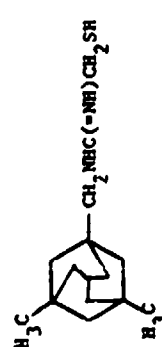
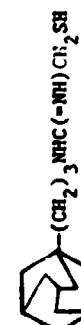
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{24}ClN_3OS$	151355		2	50	0	450	0(T), 0	148
$C_{15}H_{24}N_2OS$	74054		24	56	0			145, 240
$C_{15}H_{24}N_2OS$	123950		2	60	0	150	+, ±	224
$C_{15}H_{24}N_2S_2$	166839		2	40	0	300	+, ±	148
$C_{15}H_{24}N_4O_4S_2$	25901		42	100	0			165, 242
$C_{15}H_{25}NOS$	33711		1	40	0			294, 324

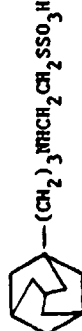
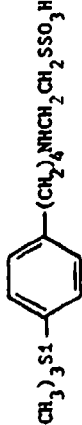
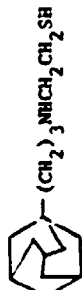
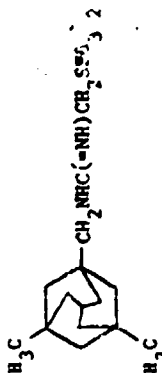
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Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{25}NO_5$	36960		1	50	0			324
$C_{15}H_{25}NO_5$	38493		1	100	+(T), 0			324
$C_{15}H_{25}NO_4S_2$	4777			50	+, ±, 0	1400	0	226, 294
$C_{15}H_{25}NO_4S_2$	4755			10	+, 0			226, 285
$C_{15}H_{25}NO_4S_2$	33712			250	0 (T), ± (T)			294, 324

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{25}NO_4S_2$	36958			50	0			294, 324
$C_{15}H_{25}NO_4S_2$	71466			180	0			324
$C_{15}H_{25}NO_5S_2$	3828			50	+(T), +	13	+(T), 0	226, 294
$C_{15}H_{25}NO_5S_2$	3832			75	+(T), +	800	+	226, 294
$C_{15}H_{25}NO_5S_3$	6999			100	0			183

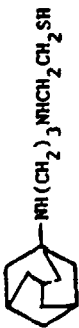
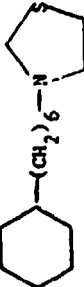
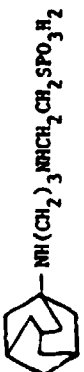
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{26}N_2O_3S_2$	157077			20 0		600 0		98,299
$C_{15}H_{26}N_2O_3S_2$	157799			5 0 (T), ±		600 0		98,299
$C_{15}H_{26}N_2O_3S_2$	199268			5 0		200 0		269
$C_{15}H_{26}N_2O_3S_3$	193684			3 0		100 0		126
$C_{15}H_{26}N_2O_4S_2$	75234			100 + (T), +, ±		600 0		43,92,294

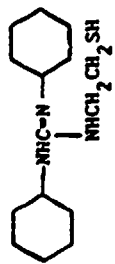
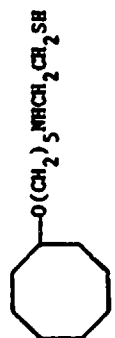
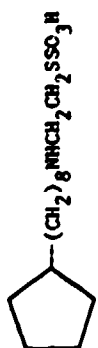
Molecular Formula	UN Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{26}N_2O_4S_2$	124940			50	+0			43,294
$C_{15}H_{26}N_2O_4S_2$	145378			15	+0	200	0	299,311
$C_{15}H_{26}N_2O_4S_2$	149750			30	+(T).+.	300	0	299,311
$C_{15}H_{26}N_2S$	157078		1	5	+.	100	+(T).+.	98,299
$C_{15}H_{26}N_2S$	159242		1,42	5	+(T).0	100	+(T).+.	98,299

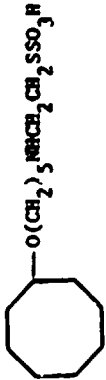
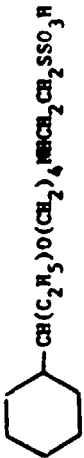
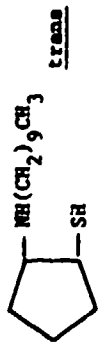
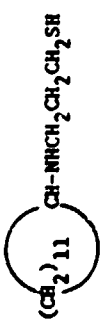
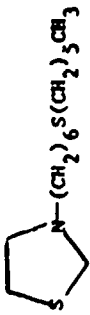
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{26}N_4O_3PS$	9069		42	100	0			165,243
$C_{15}H_{27}NO_3S_2$	151323			60	+,±			188
$C_{15}H_{27}NO_3S_2S_1$	98101			60	0(T),0			244
$C_{15}H_{27}NS$	156784		6	60	T,0	125	0	160
$C_{15}H_{27}N_4O_3PS$	159243		45,57	8	+(T),+,0	50	+(T),+	98,299
$C_{15}H_{27}N_4O_3PS$	138736		18	60	0	200	0	43

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{15}H_{27}N_2O_5PS$	170439		45	125 0		500	0(T), 0	206
$C_{15}H_{28}NO_3PS$	151321		57	70 +, 0		500	0	188
$C_{15}H_{28}N_2O_5S_2$	151358			6 0		300	0(T), 0(T)	299, 300
$C_{15}H_{28}N_2O_5S_2$	156917			13 + (T), ±		600	0(T), 0(T)	299, 300

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Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{28}N_2O_4S_2$	204158	 DL		3	+, 0	100	0 (T), 0 (T)	120
$C_{15}H_{28}N_2O_5S_2$	165563	$CH_3CONHC(COOC_2H_5)_2(CH_2)_4NHCH_2CH_2SSO_3H$		100	0	500	0	230
$C_{15}H_{28}N_2S$	157448	 $NH(CH_2)_3NHCH_2CH_2SH$	7	50	+, 0	200	0	188
$C_{15}H_{29}NS$	34141	 $(CH_2)_6N(CH_2)_3SH$	1	40	S			324
$C_{15}H_{29}N_2O_3PS$	170440	 $NH(CH_2)_3NHCH_2CH_2SPO_3H_2$	42	75	D			206

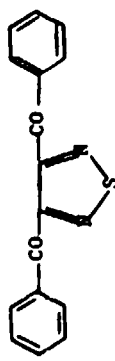
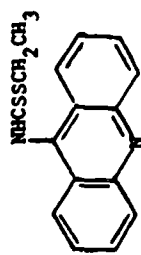
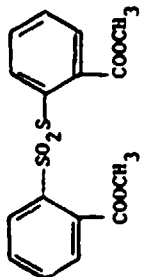
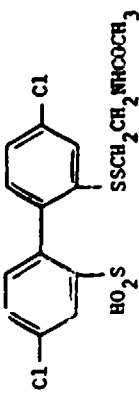
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{29}N_3S$	2000			15 0				31
$C_{15}H_{31}NOS$	33716		1	50 $\pm$				324
$C_{15}H_{31}NO_2S_2$	157086	$H_2NCH_2CH_2S-S-COO(CH_2)_{11}CH_3$	1	100 0				210
$C_{15}H_{31}NO_3S_2$	3825			8 $\pm$ 0				226, 293
$C_{15}H_{31}NO_3S_2$	3831			5 0				293, 295
$C_{15}H_{31}NO_3S_2$	4539			8 $\pm$ (T)				226, 293

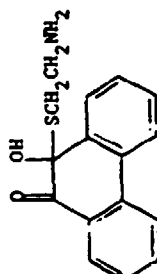
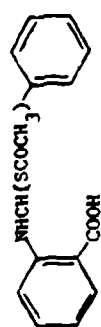
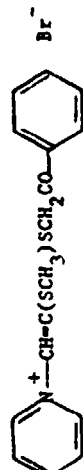
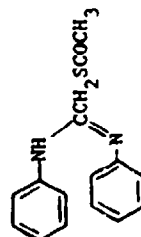
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{31}NO_4S_2$	133568			50				223
$C_{15}H_{31}NO_4S_2$	4545			25	+(T), +.0	1000	+(T)	226, 286
$C_{15}H_{31}NO_4S_2$	25331			60	+.0	600	0(T)	226, 286
$C_{15}H_{31}NS$	2871		6	300				152
$C_{15}H_{31}NS$	136216		6	200		2000	0	223
$C_{15}H_{31}NS_2$	154979		1	60	+.0	90	+.0	298

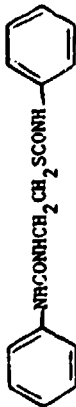
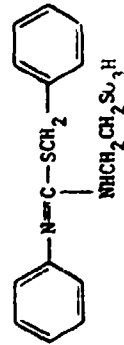
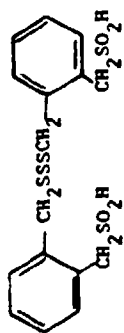
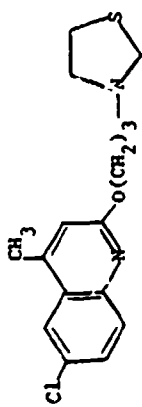
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{31}NS_2$	157076		1	100 ± 0	+ 0	600	+ ±	298
$C_{15}H_{31}NS_2$	158495		1	50 + ±	+ ±	150	+ 0	298
$C_{15}H_{31}N_2O_4PS$	25905			250	0(T), 0			165, 243
$C_{15}H_{32}NO_3PS$	133566		46, 57	30	0	350	0	223
$C_{15}H_{32}NO_5PS$	5817			200	0			56, 243
$C_{15}H_{32}N_2OS$	2242			100	0			139
$C_{15}H_{32}N_2S$	34409		2	100	0			313

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{32}N_4O_4PS$	33785	 $CH_3(CH_2)_3NHCSSCH_2CH_2NCH_2CH_2NHCSSNH(CH_2)_3CH_3$ C(=NH)NH ₂	42	100	0(T), 0		165, 243	
$C_{15}H_{32}N_6S_3$	2983			50	0			132
$C_{15}H_{32}O_2S_2$	1912	$EOCH_2(CH_2)_4S(CH_2)_5S(CH_2)_4CH_2OH$		350	0			12
$C_{15}H_{33}NOS$	2703	$CH_3(CH_2)_9CH_2NCH_2CH(CH_3)SH$	1	75	0			179
$C_{15}H_{33}NO_2S_2$	2109	$CH_3(CH_2)_9NCH(CH_2CH_2CH_3)CH_2SSO_3H$		500	0			109
$C_{15}H_{33}NO_3S_2$	2236	$CH_3(CH_2)_{12}NCH_2CH_2SSO_3H$		5	+(T), 0			161, 181, 239
$C_{15}H_{33}NS$	2059	$CH_3(CH_2)_{12}NCH_2CH_2SH$	1	25	0			211

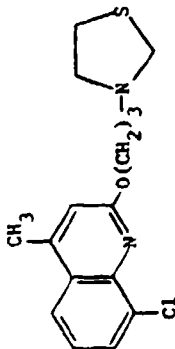
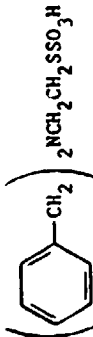
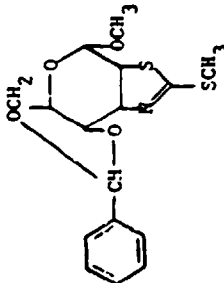
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{33}N_3O_2S_2$	4442	$CH_3(CH_2)_{11}NCH_2CH_2SSO_3H$ C(=NH)NH ₂		4 0				315
$C_{15}H_{33}N_3S$	4438	$CH_3(CH_2)_{11}NCH_2CH_2SH$ C(=NH)NH ₂	6	3.2 0				315
$C_{15}H_{33}N_3S$	4441	$CH_3(CH_2)_{11}NCH_2CH_2SC(=NH)NH_2$	7	10 0				315
$C_{15}H_{34}N_2O_2S_4$	99598	$HO_3SSCH_2CH_2CH_2NH(CH_2)_9NCH_2CH_2CH_2SSO_3H$		30 0				270
$C_{15}H_{34}N_2S_2$	2606	$HSCH_2CH_2NH(CH_2)_{11}NCH_2CH_2SH$	2	25 0				199
$C_{15}H_{36}N_2O_6P_2S_2$	108508	$H_2O_3PSCCH_2CH_2CH_2NH(CH_2)_9NCH_2CH_2CH_2SPO_3H_2$		8 0				270

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{10}N_2O_2S$	861			500	0			149
$C_{16}H_{14}N_2S_2$	5937		42	30	0			129
$C_{16}H_{14}O_6S_2$	822			500	0			276
$C_{16}H_{15}Cl_2NO_3S_3$	188300		57	100	+0	1000	+(T), 0	323

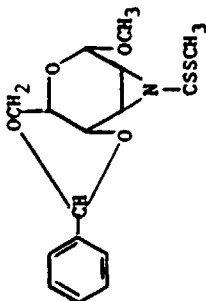
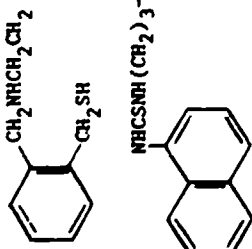
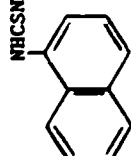
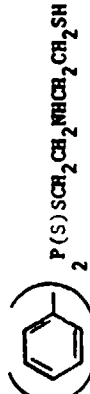
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{15}NO_2S$	95569		1	75	0			65
$C_{16}H_{15}NO_3S$	9842			360	0			232
$C_{16}H_{16}BrNOS_2$	6130			100	0			129
$C_{16}H_{16}N_2OS$	1167			300	±			10

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{17}N_2O_2S$	1874			800 0				139
$C_{15}H_{18}N_2O_3S_2$	2700			800 0				297
$C_{16}H_{18}N_2S$	75611		10	56 0				11
$C_{16}H_{18}N_4S_2$	754			200 +,0				215
$C_{16}H_{18}O_4S_5$	179350		65,58	446 +,+,+,±		800 +,0		322,323
$C_{16}^{19}C^{19}N_2OS$	111487		1	70 ±,0		600 0		224

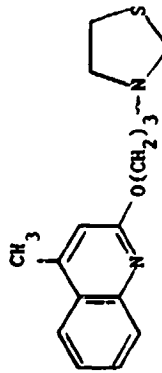
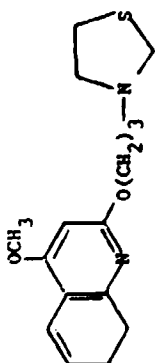
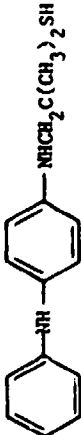
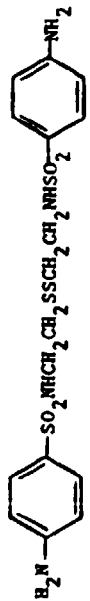
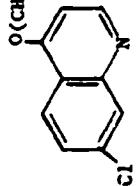
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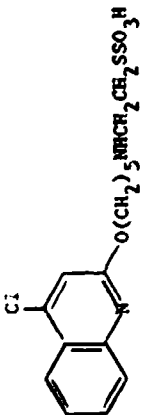
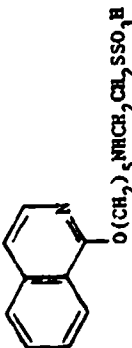
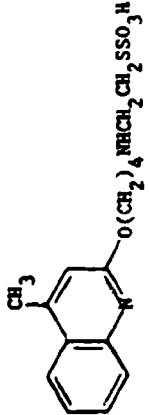
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{19}ClN_2OS$	117930		1	50 ±.0	500 ±		157	
$C_{16}H_{19}NO_3S_2$	2755			200 0			89	
$C_{16}H_{19}NO_4S_2$	761			300 0			227	

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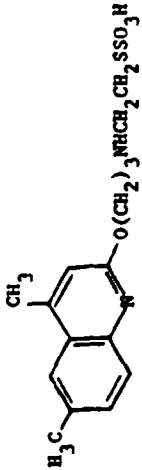
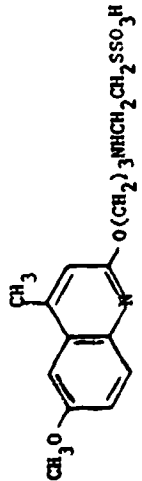
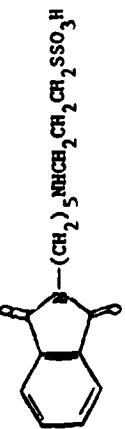
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{19}NO_4S_2$	762			40	0			227
$C_{16}H_{19}NS$	1994		1	200	0			99
$C_{16}H_{19}N_3S$	33782			180	0			165
$C_{16}H_{20}NPS_2$	111500		27	60	0			54
$C_{16}H_{20}NPS_3$	108539		27	80	0			54

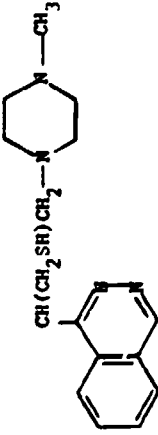
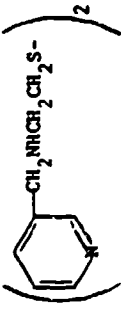
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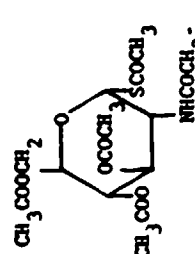
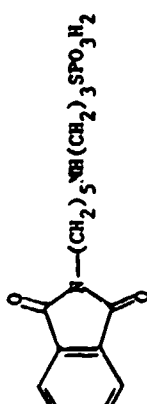
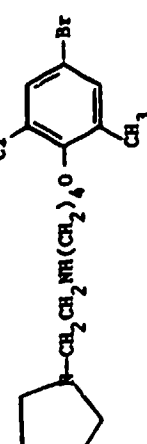
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{20}N_2OS$	61134		2	180	+(T)	500	±	224
$C_{16}H_{20}N_2O_2S$	122958			100	0	500	0	224
$C_{16}H_{20}N_2S$	787			1000	0(T)			216
$C_{16}H_{20}N_4O_4S_4$	4549		2	360	0			11
$C_{16}H_{21}ClN_2O_4S_2$	36955			150	0			144, 224

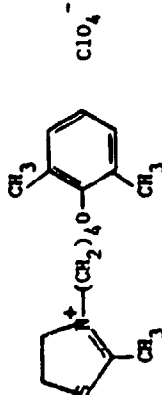
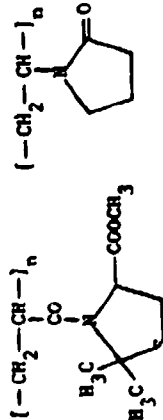
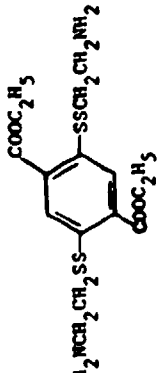
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{21}ClN_2O_4S_2$	111486			10	0			224
$C_{16}H_{21}N_3S_2$	5134			150	0			336
$C_{16}H_{22}N_2O_4S_2$	111491			34.5	± 0			224
$C_{16}H_{22}N_2O_4S_2$	104706			100	$+, +, \pm, 0$	500	0	224

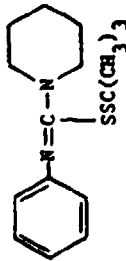
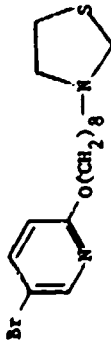
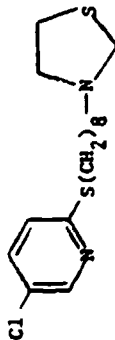
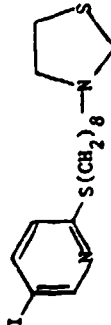
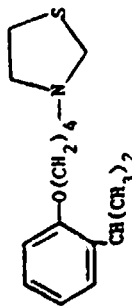
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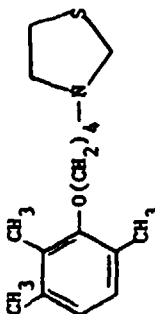
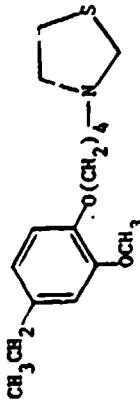
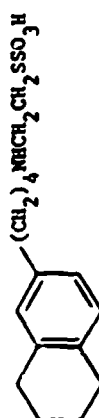
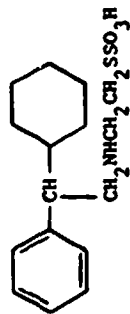
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{22}N_4O_5S_2$	122970			70	+, +, +, ±	600	0	224
$C_{16}H_{22}N_4O_5S_2$	111490			25	+, ±			224
$C_{16}H_{22}N_4O_5S_2$	121226			50	0			306
$C_{16}H_{22}N_4O_5S_2$	148660			80	0			306

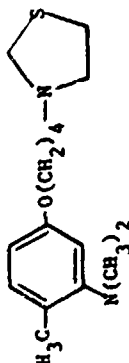
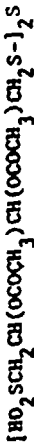
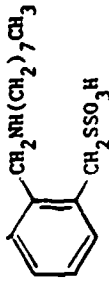
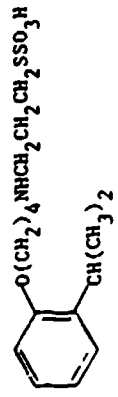
Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Referenced
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{22}N_3O_3PS_2$	33788			1000	0			165,243
$C_{16}H_{22}N_3O_4PS$	46			100	+(T), 0			56,243
$C_{16}H_{22}N_4S$	1175		3,42	14	0			128
$C_{16}H_{22}N_4S_2$	755		2,42	100	0			215

Molecular Formula	WR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{23}NO_9S$	619			1000	0			182
$C_{16}H_{23}N_2O_5PS$	148658			75	0			306
$C_{16}H_{23}N_2O_5PS$	148659			50	0			306
$C_{16}H_{24}BrClN_2OS$	151332		2	40	0	400	0	148

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{24}ClNO_5S$	50489			75	0(T), 0			92
$C_{16}H_{24}N_2O_5S$ 555	81582			400	0			11
$C_{16}H_{24}N_2O_5S$	102268		24	26	0	180	0(T)	54,240
$C_{16}H_{24}N_2O_5S$	2012			80	0			35
$C_{16}H_{24}N_2O_5S_4$	157297		2	150	+, +, 0	200	0	245

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{24}N_2S_2$	137602			100	0			260
$C_{16}H_{25}BrN_2OS$ 556	94543		1	50	0	150	±	224
$C_{16}H_{25}ClN_2S_2$	160442		1	70	0	250	+(T), ±, 0	298
$C_{16}H_{25}IN_2S_2$	162866		1	100	0	200	±, 0	298
$C_{16}H_{25}MNOS$	39744		1	50	0			92,144

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{25}NO_3S$	42760		1	100 0				324
$C_{16}H_{25}NO_2S$	138411		1	70 $\pm$ 0		150 0		324
$C_{16}H_{25}NO_3S_2$	3560			10 0				285
$C_{16}H_{25}NO_3S_2$	27656			50 $\pm$ 0				226

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{26}N_2OS$	136180		2	50	0	300	0(T),0	43
$C_{16}H_{26}N_2O_5S$	102267		24	12	0			54,240
$C_{16}H_{26}N_2O_5S$	179351		42,58	300	0	600	0	322,323
$C_{16}H_{27}NO_3S_2$	1252			593	0			99
$C_{16}H_{27}NO_3S_2$	70038			150	0			145,242
$C_{16}H_{27}NO_4S_2$	54209			80	+0			324

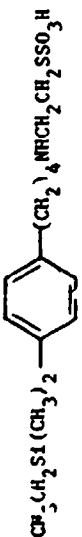
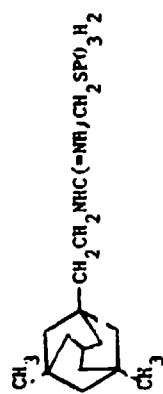
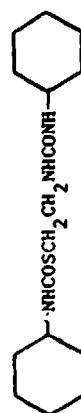
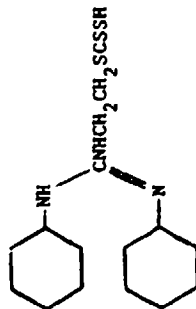
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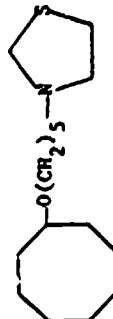
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{27}NO_5S_2$	156773			400	0			188
$C_{16}H_{27}NO_5S_3$	25176			50	0			307
$C_{16}H_{27}NS$	1178		1	100	0			99
$C_{16}H_{27}N_3O_5S_2$	1097			2000	0			337
$C_{16}H_{28}NO_2PS_2$	183323		42	200	0	500	0	70

559

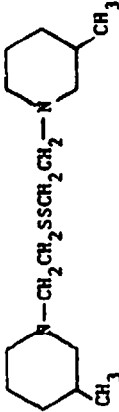
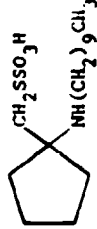
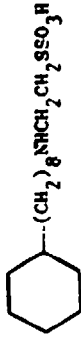
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{28}NO_3PS$	74169			40	0			145,243
$C_{16}H_{28}NO_5PS$	156783		57	75	+,-,0	150	+,0	188
$C_{16}H_{28}N_2OS$	176252		2	40	+,+	500	0(T),0	61
$C_{16}H_{28}N_2O_2S_6$	686			350	0			259
$C_{16}H_{28}N_2O_3S_2$	199631			10	0(T),0	600	0	269
$C_{16}H_{28}N_2O_4S_2$	111489			50	+,+,0	600	0	157,286

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{28}N_4O_2S_2$	136181			90	+ (T), +, ±, 0			43, 286
$C_{16}H_{28}N_4S_6$	2860			1000	0			167
$C_{16}H_{28}N_4O_2PS$	32064			150	0			165, 243
$C_{16}H_{29}F_3N_2$	174432		2	200	T, 0	500	0	338
$C_{16}H_{29}NO_3S_2$	201724			10	+, 0	250	0	269

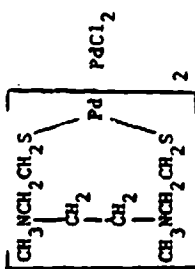
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{16}H_{29}NO_3S_2$	125677			5	±, 0	200	0	244
$C_{16}H_{29}N_2O_3PS$	201731			4	±, 0	15	0	269
$C_{16}H_{29}N_3O_2S$	2262			800	0			14
$C_{16}H_{29}N_3S_3$	1764			150	0 (T), 0			31

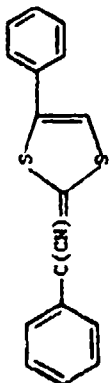
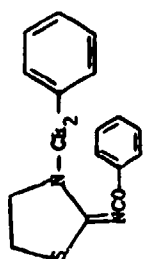
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{30}N_3O_3PS$	92979		42	90	0			54,243
$C_{16}H_{30}N_4S_2$	166841		2	20	$\pm$	35	$\pm$, 0	98,299
$C_{16}H_{30}N_4S_2$	197494		1	19	$\pm$, 0	100	0(T), 0	120
$C_{16}H_{31}NOS$	143994		1	30	0	300	$\pm$, $\pm$	324
$C_{16}H_{31}NO_2S$	3855			25	0			307

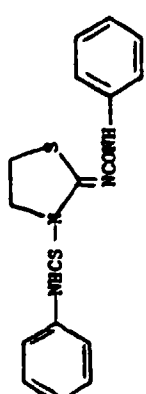
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{15}H_{31}NO_2S_4$	189165	$H_2NCH_2CH_2SC(S)S-C(O)O(CH_2)_{11}CH_3$ 	1	100	+,0	600	+,0	70
$C_{16}H_{31}NO_2S_3$	3566			8	+,±	750	0	226,293
$C_{16}H_{31}NO_2S_3S_1$	132920	$(C_2H_5)_3Si-(CH_2)_4NHCH_2CH_2SSO_3H$ 		10	0			244
$C_{16}H_{31}NO_2S_2$	150728	$CH_3(CH_2)_9NCH_2CH_2SSO_3H$ $COCH_2CH_2COOH$	57	150	0	500	0	11
$C_{16}H_{32}N_2O_2S_2$	609	$HOCH_2(CHOH)_4CONHCH_2CH_2SSCH_2CH_2NHCO(CHOH)_4CH_2OH$ <u>Glucose</u>		2000	0			220
$C_{16}H_{32}N_2S$	151330		2	30	0	250	0(T),±	148
$C_{16}H_{32}N_2S_2$	692		2	70	0			23

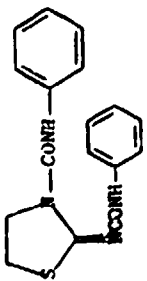
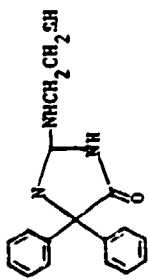
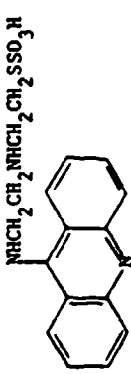
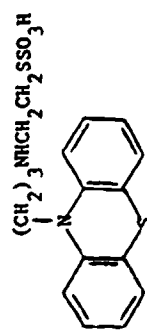
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{32}N_2S_2$	177481		2	100	0(T), 0	300	+ , 0	7
$C_{16}H_{33}NOS$	79	$H_2NCH_2CH_2SCO(CH_2)_{12}CH_3$	1	400	0(T), 0			81
$C_{16}H_{33}NO_4S_2$	169413	$CH_3(CH_2)_9NHCH_2CH_2S-S-SCOCH(CH_3)_2$		15	+ , 0	500	0	71
$C_{16}H_{33}NO_3S_2$	3312			75	0			109
$C_{16}H_{33}NO_3S_2$	4105			5	+ , 0	800	0(T)	226, 293
$C_{16}H_{33}NO_3S_2$	4536					1000	0	226, 293
$C_{16}H_{33}NO_4S_2$	4544			10	+ (T) , 0			226, 296

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{33}NO_4S_2$	54208			40	± 0			286, 324
$C_{16}H_{33}NS_2$	99580		1	60	± 0	400	+0	298
$C_{16}H_{33}NS_2$	157079		1	50	0	400	0	298
$C_{16}H_{33}N_2O_3PS$	80405	$(CH_3)_2C=CHCH_2CH_2C(CH_3)=CHCH_2NH(CH_2)_4NHCH_2CH_2SPO_3H_2$	77	50	0			145, 243
$C_{16}H_{34}N_2OS_2$	5807	$CH_3CONHCH_2CH_2SSCH_2CH_2NH(CH_2)_9CH_3$	1	18	0			339
$C_{16}H_{34}N_4S_2$	122	$(CH_3)_3CNHCSNH(CH_2)_6NHCSNH(CH_3)_3$		1000	0			340
$C_{16}H_{35}NO_3S_2$	2281	$CH_3(CH_2)_{13}NHCH_2CH_2SSO_3H$		5	± 0			161, 181, 239

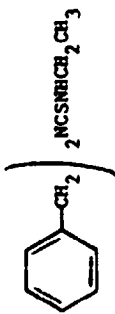
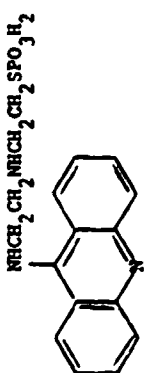
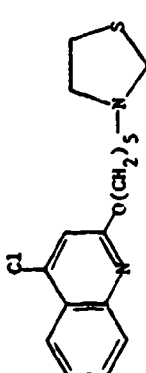
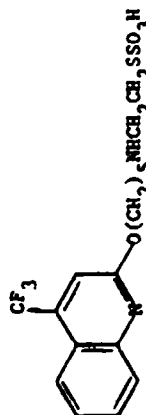
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{16}H_{35}NO_3S_2$	2324	$[C_3(CH_2)_6]_2NCH_2CH_2SSO_3H$		200	0			89
$C_{16}H_{35}NS$	2334	$CH_3(CH_2)_{13}NHCH_2CH_2SH$	1	25	0(T), 0			211
$C_{16}H_{35}N_2O_3PS$ 567	50406	$(CH_2)_{11}CH-NHCH_2CH_2NHCH_2CH_2SPO_3H_2$	76	40	0(T), 0			145, 243
$C_{16}H_{36}Cl_2N_2Pd_3S_4$	1880			25	0			171
$C_{16}H_{36}N_2MS_2$	2352	$[CH_3(CH_2)_5NHCH_2CH_2S]_2NI$		25	0			76
$C_{16}H_{36}N_2O_3S_2$	36951	$HOCH_2(CH_2)_5NHCH_2CH_2SSCH_2CH_2NH(CH_2)_5CH_2OH$	2	100	0			144
$C_{16}H_{36}N_2O_3S_4$	99597	$HO_3SS(CH_2)_3NH(CH_2)_{10}NH(CH_2)_3SSO_3H$		35	0(T), 0			270

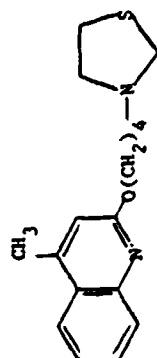
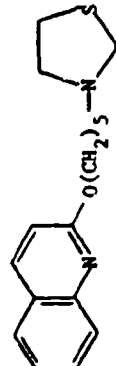
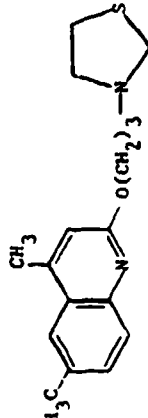
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{16}H_{36}N_2S$	2311	$CH_3(CH_2)_9N(CH_3)(CH_2)_3NHCH_2CH_2SH$	2	25	0			124
$C_{16}H_{36}N_2S_2$	2235	$HSCH_2CH_2NH(CH_2)_{12}NHCH_2CH_2SH$	2	38	0			211
$C_{16}H_{37}NO_{33}SS1$	150073	$H_2NC(CH_3)_2CH_2SS1[OC(CH_3)_3]_3$		50	4.0			1
$C_{16}H_{38}N_2O_6P_2S_2$	108507	$H_2O_3PS(CH_2)_3NH(CH_2)_{10}NH(CH_2)_3SPO_3H_2$		10	0(T), 0			270
$C_{16}H_{38}N_2S_2$	199616	$\{H_2NC(=NH)NH(CH_2)_5NHCH_2CH_2S-\}_2$	25.45	25	0(T), 0	400	0(T), 0(T), 0	62
$C_{17}H_{11}NS_2$	176620			150	0(T), 0			129
$C_{17}H_{16}N_2OS$	3068			200	0			132

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{16}N_4O_5$	48948			200	0			137

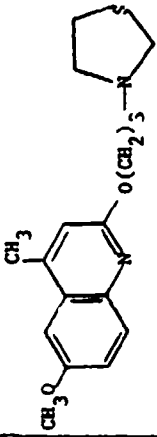
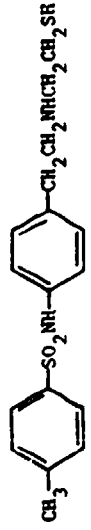
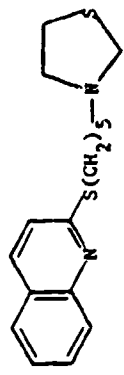
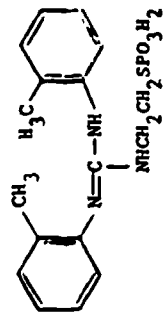
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{16}N_4O_2S$	41040			800	± 0			11
$C_{17}H_{17}N_3OS$	1457			400	0			20
$C_{17}H_{18}N_2S$	75612		10	1000	0			11
$C_{17}H_{19}N_3O_3S_2$	3118		1,42	100	0(T)			22
$C_{17}H_{20}N_2O_3S_3$	9097			50	0			144

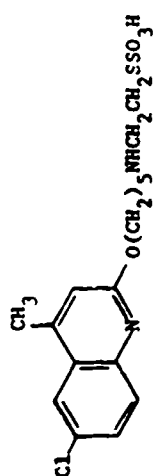
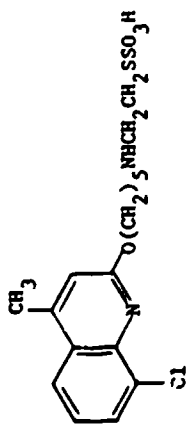
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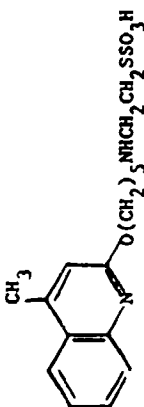
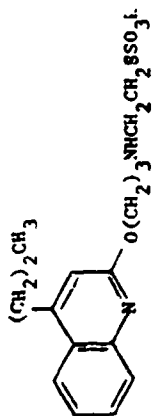
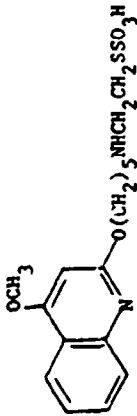
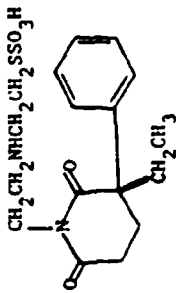
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{20}N_2S$	102230			150 0				11
$C_{17}H_{20}N_3O_3PS$	3284		45	40 0(T).0				147
$C_{17}H_{21}ClN_2OS$	111488		1	150 0		500 0		224
$C_{17}H_{21}F_3N_2O_4S_2$	132199			5 0				43, 224

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{21}NO_4S_2$	2813			5 0				226
$C_{17}H_{21}N_3O_4S_2$	29670			75 $\pm$ 0				165,242
$C_{17}H_{22}N_2OS$	106163		2	110 0		300 0		224
$C_{17}H_{22}N_2OS$	106501		2	100 $\pm$ 0		200 $\pm$ 0		224
$C_{17}H_{22}N_2OS$	123951			50 0		500 $\pm$		224

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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{22}N_2O_2S$	146098			100	0			224
$C_{17}H_{22}N_2O_2S_2$	4612		27	75	0			307
$C_{17}H_{22}N_2S_2$	91488		2	75	+, +	400	+, +, 0	298
$C_{17}H_{22}N_2O_3PS$	150069			25	0			19, 2/3

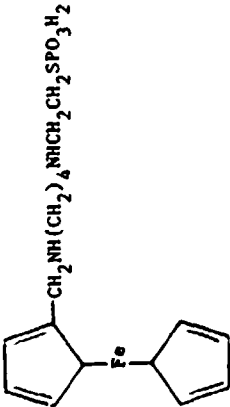
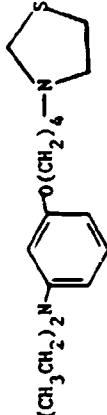
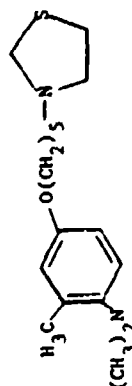
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				I.P.		P.O.		
				Dose Mg/Kg	Pating	Dose Mg/Kg	Rating	
$C_{17}H_{22}N_3O_4PS$	29669			100	+(T)			264
$C_{17}H_{23}ClN_2O_4S_2$	111492			70	0(T), 0			224
$C_{17}H_{23}ClN_2O_4S_2$	120768			20	0			224
$C_{17}H_{23}N_3O_4S_2$	80397			500	0			145, 242
$C_{17}H_{24}N_4O_4PS$	27394			100	0			165, 243

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{24}N_2O_4S_2$	42761			560	0(T), 0			224
$C_{17}H_{24}N_2O_4S_2$	126456			60	+, +, 0	400	0	224
$C_{17}H_{24}N_2O_5S_2$	122959			100	+, +	600	0	224
$C_{17}H_{24}N_2O_5S_2$	157868			175	0(T), 0			256

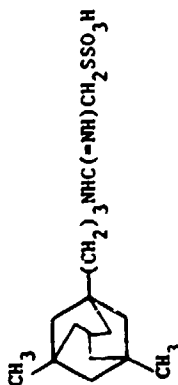
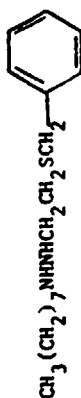
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Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{24}N_3O_4PS$	61126			1000	0			145,243
$C_{17}H_{25}NO_9S_2$	1438			400	0(T), 0(T)			281
$C_{17}H_{25}N_3O_5S_2$	74175		6	20	0			288
$C_{17}H_{26}N_3O_5PS$	74174		44	90	0			288

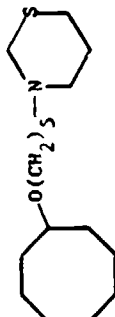
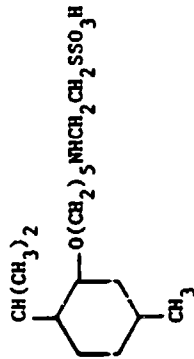
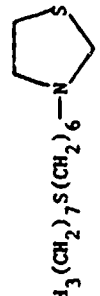
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Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{27}FeN_2O_3PS$	74131		42	90	0(T),0			145,243
$C_{17}H_{27}N_2O_3PSS1$	138677			50	0			244
$C_{17}H_{28}N_2OS$	117934		2	60	0	225	0	157
$C_{17}H_{28}N_2OS$	136182		2	50	0	200	±(T)	43

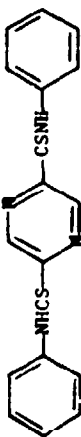
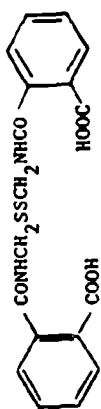
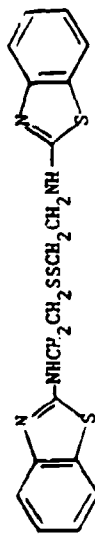
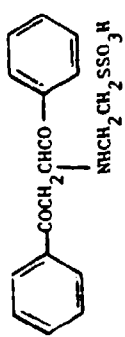
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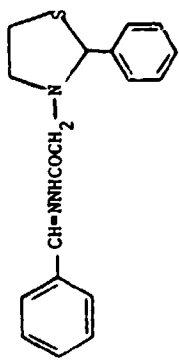
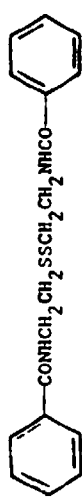
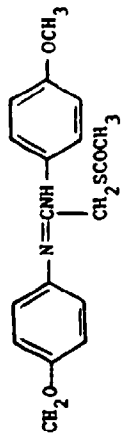
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{30}N_2O_3S_2$	166842			6 0		100 0		98,299
$C_{17}H_{30}N_2O_3S_2$	201730			8 0		300 0		269
$C_{17}H_{30}N_2S$	2692		1	50 0				124
$C_{17}H_{30}N_2O_3S_5$	36249		42	100 0				165,243
$C_{17}H_{31}N_2O_3S_2$	165569			150 0				206
$C_{17}H_{32}N_2O_3S_4$	170447		57,44	250 T,0		250 0		206

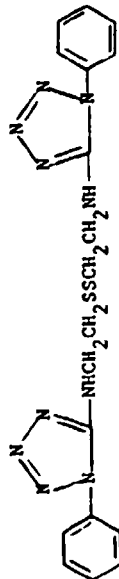
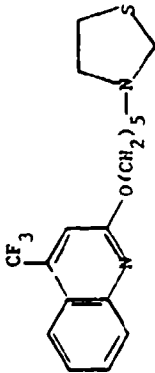
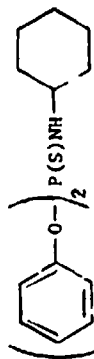
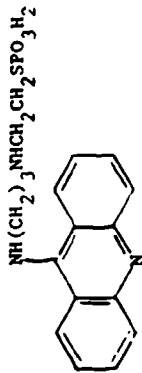
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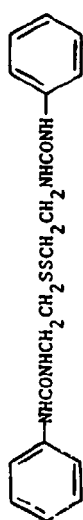
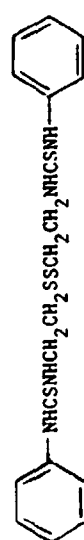
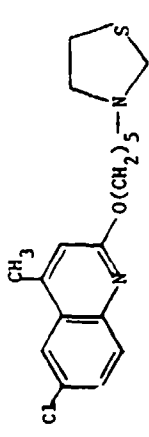
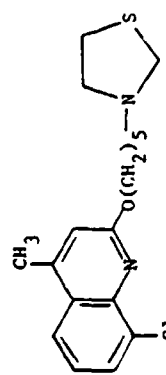
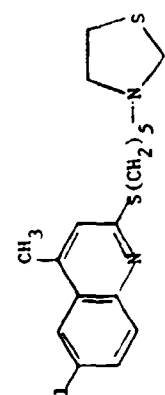
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I. P.		P. O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{33}NOS$	146099		1	40	0	200	0	92
$C_{17}H_{34}N_2O_5S_2$	84136	$CH_3COSCH_2CH_2NH(CH_2)_9NHCH_2CH_2SCOOCH_3$	7	50	0			270
$C_{17}H_{35}NO_4S_2$	138415			30	+, +, ±, 0	600	0	43, 286
$C_{17}H_{35}NO_5S_2$	5821	$CH_3(CH_2)_{11}OCOCH_2CH_2NHCH_2CH_2SSO_3H$		200	0			56, 242
$C_{17}H_{35}NS_2$	154980		1	100	0(T), 0	300	0, ±	298
$C_{17}H_{36}NO_5PS$	5818	$CH_3(CH_2)_{11}OCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		120	0(T), 0			56, 243

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{17}H_{36}N_2O_5S_2$	25098	$CH_3(CH_2)_9NHCH_2CH_2SS(CH_2)_3NHCOCH_3$	1	56	+, ±			339
$C_{17}H_{36}O_2S_2$	1910	$HO(CH_2)_6-S-(CH_2)_5-S-(CH_2)_6OH$		1000	0			12
$C_{17}H_{37}NOS$	1754	$CH_3(CH_2)_6CH-O-(CH_2)_3NHCH_2CH_2SH$ $(CH_2)_3CH_3$	1	30	0			124
$C_{17}H_{37}NOS$	2066	$CH_3(CH_2)_{11}-O-(CH_2)_3NHCH_2CH_2SH$	1	50	0(T), 0			124
$C_{17}H_{37}NO_3S_2$	2365	$CH_3(CH_2)_{14}NHCH_2CH_2SSO_3H$		30	0(T), 0(T), 0			161, 181, 239
$C_{17}H_{37}NS$	2084	$CH_3(CH_2)_{14}NHCH_2CH_2SH$	1	25	0			211
$C_{17}H_{37}N_3S$	2837	$CH_3(CH_2)_{13}NHC(=NH)SCH_2CH_2NH_2$	7	25	0			314
$C_{17}H_{38}N_2O_4SS1$	159086	$H_2NCOCH_2CH_2NHCH_2CH_2SS1[OC(CH_3)_3]_3$	27	20	0	200	0	19

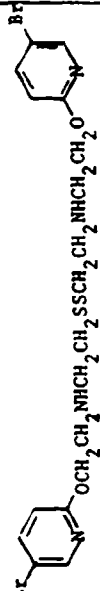
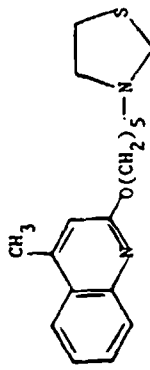
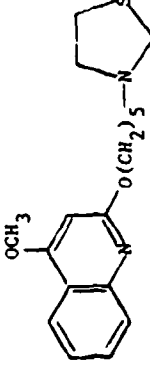
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{14}N_4S_2$	855			1000	0			8
$C_{18}H_{16}N_2O_5S_2$ 582	4121		58	2000	0			341
$C_{18}H_{18}N_2OS$	94794		27	50	0			54,240
$C_{18}H_{18}N_4S_4$	620			500	0			342
$C_{18}H_{19}NO_5S_2$	3842			100	0			56,242

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{19}N_3O_3S$	92972			300	0(T), 0(T), 0			62
$C_{18}H_{20}N_2O_2S_2$	27286			120	0			343
$C_{18}H_{20}N_2O_2S_3$	150084			300	4, 0	600	0	1, 19
$C_{18}H_{20}N_2O_3S$	1366			200	0			10
$C_{18}H_{20}N_2S$	9766			1000	0			11

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{20}N_{10}S_2$	176617			500 0		600 0		129
$C_{18}H_{21}F_3N_2OS$	132196			50 0		400 ±.0		224
$C_{18}H_{22}NO_2PS$	151329			500 0		1000 0		60
$C_{18}H_{22}N_3O_3PS$	3310		45	25 0		200 0		147

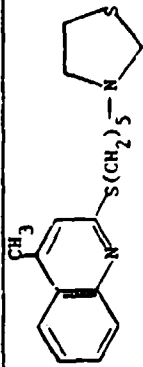
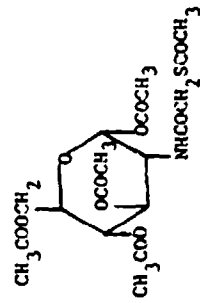
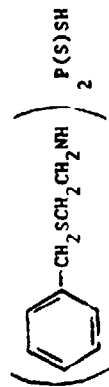
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{22}N_4O_2S_2$	1956			1870	0			20
$C_{18}H_{22}N_4S_4$	2460			100	0			14
$C_{18}H_{23}ClN_2OS$	117883		1	300	+ 0	400	0	224
$C_{18}H_{23}ClN_2OS$	123952		1	60	0	600	0	224
$C_{18}H_{23}ClN_2S_2$	138766		2	100	0			298

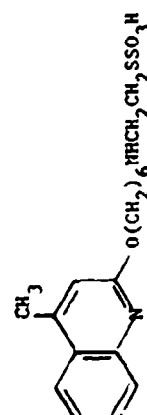
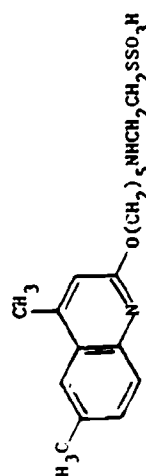
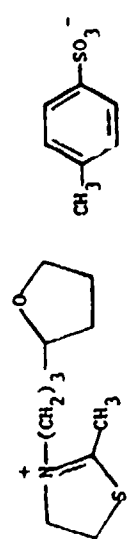
585

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{23}NS_2$	811		1	80	0			252
$C_{18}H_{24}Br_2N_4O_2S_2$	104698			70	0(T), 0			224
$C_{18}H_{21}NPS_2$	92980	$(CH_3)_3CNHCH_2CH_2SP(S)(C_6H_5)_2$	23	30	0			54
$C_{18}H_{24}N_2OS$	43894		2	320	0	300	C	224
$C_{18}H_{24}N_2O_2S$	123948			50	0	200	0	224

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Molecular Formula	Wt. Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₈ H ₂₄ N ₂ O ₆ S ₄	138747			50	0			290
C ₁₈ H ₂₄ N ₂ O ₆ S ₄	156903			320	0			245
C ₁₈ H ₂₄ N ₂ O ₆ S ₂	149346			300	0, +	600	0	245
C ₁₈ H ₂₄ N ₂ O ₆ S ₂	149528			500	0(T), ±			245
C ₁₈ H ₂₄ N ₂ S ₂	126452		2,42	60	±, 0	400	+	298

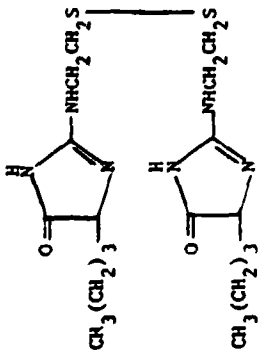
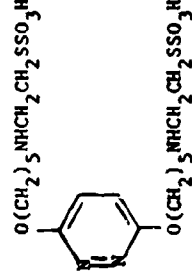
Molecular Formula	MR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{24}N_2S_2$	126457		2	150	0	500	0	298
$C_{18}H_{25}NO_{11}S$	693			1500	0			344
$C_{18}H_{25}N_2PS_4$	2256			333	0			127

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I. P.		P. O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{26}N_2O_5S$	92985			20	0			54,240
$C_{18}H_{26}N_2O_4S_2$	106157			15	0			224
$C_{18}H_{26}N_2O_4S_2$	123953			15	0			224
$C_{18}H_{27}NO_4S_2$	3134			80	0			195

Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{29}ClN_2S_2$	158498		2	90	0(T), 0	300	±(T), 0	298
$C_{18}H_{29}NO_3S_2$	3028			100	0			195
$C_{18}H_{29}NO_3S_2$	3611			15	0(T), ±			226, 285
$C_{18}H_{29}NO_4S_2$	4537			10	0			226, 294
$C_{18}H_{30}N_2OS$	150639		2	30	0	175	0	148

Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{30}N_4O_2S$	98112							

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{31}NO_4S_2$	39749			200	0			324
$C_{18}H_{31}NO_4S_2$	43899			30	0			324
$C_{18}H_{31}NO_5S_3$	9839			50	0			307
$C_{18}H_{31}NO_7S_2$	4483			300	0(T).0			56,242
$C_{18}H_{32}NO_7PS$	4478			1000	0(T)			56,243

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{32}N_2O_5S_2$	201729			8	0(T), 0	600	0(T), 0(T)	269
$C_{18}H_{32}N_6O_5S_2$ 594	1777			750	0			20
$C_{18}H_{33}N_6O_5S_4$	2577	$HN[CONH(CH_2)_4SC(O)SCH_2CH_2NHCONH_2]_2$		200	+ 0			39
$C_{18}H_{34}N_4O_8S_4$	36165			50	0(T), 0			144

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{34}N_4S_2$	166843		2	20	+, +, 0	50	0	98,299
$C_{18}H_{34}N_4S_2$	193682		2	10	+, ±	30	+, +, 0	126
$C_{18}H_{35}NOS$	138418			150	±, 0	500	0	324
$C_{18}H_{35}NO_3S_2$	3612			10	±(T), ±			226,267
$C_{18}H_{36}NO_3PS$	75235			300	0			144

595

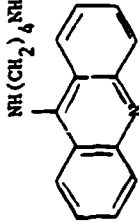
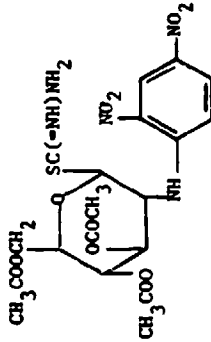
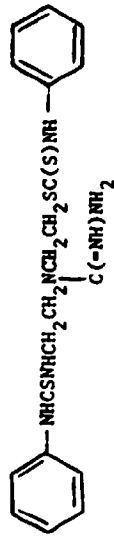
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
C ₁₈ H ₃₇ NO ₃ S	190194	H ₂ NCH ₂ CH ₂ SC(CH ₂) ₁₄ CH ₃	1	300	(T), ±, 0	600	0	126
C ₁₈ H ₃₇ NS ₂	99585	CH ₃ (CH ₂) ₉ S(CH ₂) ₅ 	1	80	0	300	0	298
C ₁₈ H ₃₇ NS ₂	156720	CH ₃ (CH ₂) ₈ 	1	80	0	300	0	298
C ₁₈ H ₃₇ N ₂ S ₃	2838	CH ₃ (CH ₂) ₁₃ NHC(=NH)NHCH ₂ CH ₂ SC(S)SH		30	0			314
C ₁₈ H ₃₈ N ₂ O ₃ S ₂	81857	(CH ₂) ₁₁  CHNH(CH ₂) ₄ NHCH ₂ CH ₂ SSO ₃ H	42	30	0(T), 0			145, 242
C ₁₈ H ₃₉ NO ₃ S ₂	2412	CH ₃ (CH ₂) ₁₅ NHCH ₂ CH ₂ SSO ₃ H		40	0(T), 0			161, 161, 239
C ₁₈ H ₃₉ NS	1615	[CH ₃ (CH ₂) ₇] ₂ NCH ₂ CH ₂ SH		240	0			207

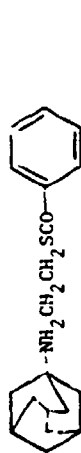
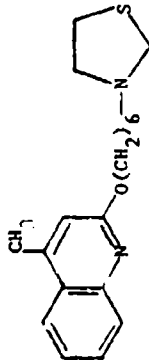
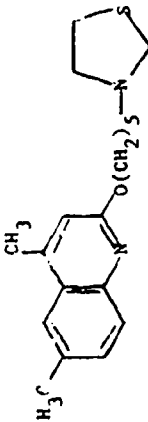
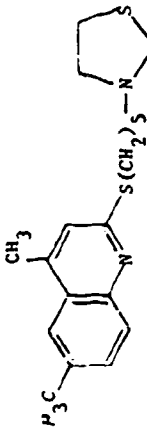
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{39}NS$	1710	$CH_3(CH_2)_{15}NHCH_2CH_2SH$		120	0			12
$C_{18}H_{39}N_2O_3PS$	74128	$(CH_2)_{11}$ $C(RNH(CH_2)_4NHCH_2CH_2SPO_3H_2)$	42	32	0			145,243

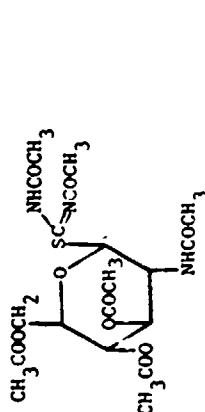
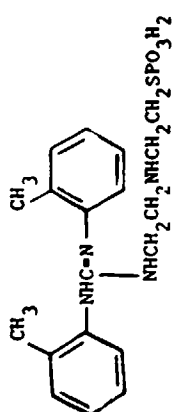
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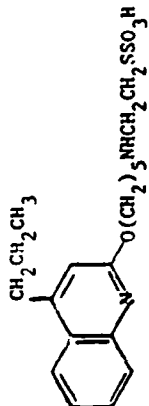
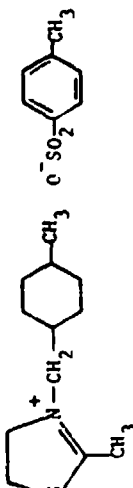
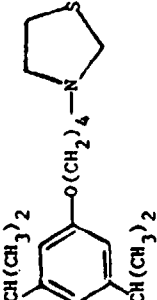
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{18}H_{40}N_2O_6S_2$	27396			300	0(T), 0		121	
$C_{18}H_{41}NO_3SSi$	150075			25	0		19	
$C_{19}H_{21}ClN_2O_2S$	176176			500	0(T), $\pm$		255	
$C_{19}H_{22}FNO_5$	2995		1	40	0		192	
$C_{19}H_{23}MO_3S_2$	3125			50	0		195	

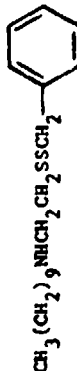
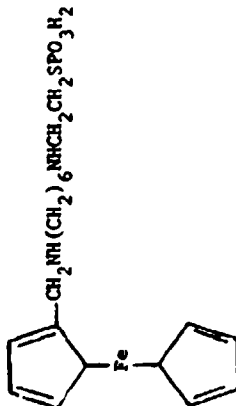
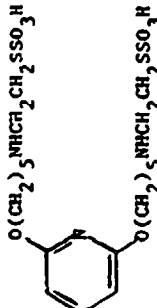
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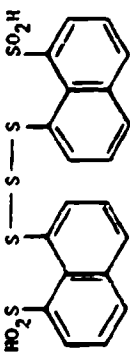
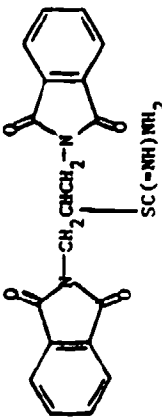
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{19}H_{23}NO_4S_2$	36247			175	0			165,242
$C_{19}H_{23}N_3O_3S_2$	3282		1.42	20	0			147
$C_{19}H_{23}N_5O_{11}S$	1694			50	0			345
$C_{19}H_{24}N_6S_3$	2931			200	0			132

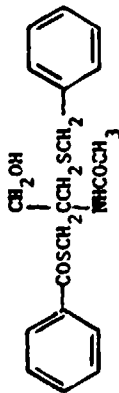
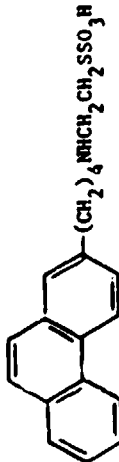
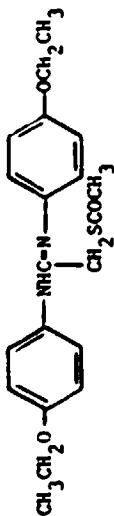
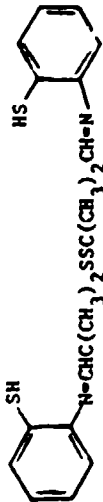
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{19}H_{25}NOS$	74132		27	250	0			145,240
$C_{19}H_{26}N_2OS$	98111		24,42	20	0			54,240
$C_{19}H_{26}N_2OS$	106158		2	100	0	450	0	224
$C_{19}H_{26}N_2OS$	123945			6	0	400	0	224
$C_{10}H_{16}N_2S_2$	134788		2	100	0			292

Molecular Formula	W.P. Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{19}H_{26}N_2S_2$	176992		1	25	+(T), +, +	200	+(T), +, +, 0	265
$C_{19}H_{27}N_3O_5S_2$	29671			1200	0			165, 242
$C_{19}H_{27}N_3O_3S$	2009			593	0			346
$C_{19}H_{27}N_3O_3PS$	46360		43	3	0			145, 243

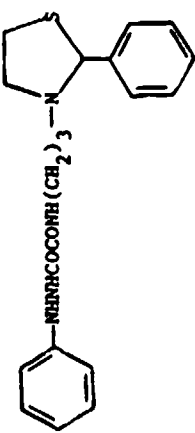
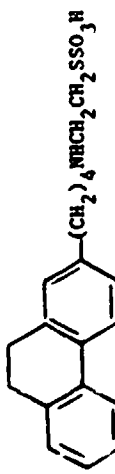
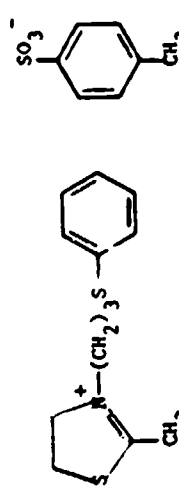
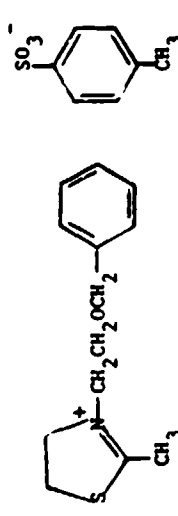
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{19}H_{27}N_4O_6PS$	27395	 $NHCONHN=C(CH_3)CH_2C(CH_3)_2NHCH_2CH_2SPO_3H_2$		100	0			165,243
$C_{19}H_{28}N_2O_4S_2$	124951	 $CH_2CH_2CH_3$ $O(CH_2)_5NHCH_2CH_2SSO_3H$		5	0			224
$C_{19}H_{29}NO_3S_2$	3200	 $N^+(CH_2)_2CH_3$ $O(CH_2)_5NHCH_2CH_2SSO_3H$		120	0(T)			195
$C_{19}H_{31}NOS$	43901	 $N(CH_2)_4N(CH_2)_2CH_3$ $O(CH_2)_5NHCH_2CH_2SSO_3H$	1	40	0	500	0	324

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{19}H_{33}NO_3S_2$	9768			7.5	+0			181,287
$C_{19}H_{33}NS_2$	26934		1	20	0(T), 0			347
$C_{19}H_{34}FeN_2O_3PS$	80408		42	50	0(T), 0			145,243
$C_{19}H_{35}N_2O_8S_4$	50483			50	0(T), 0			224

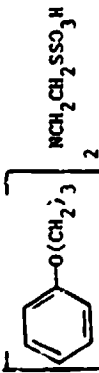
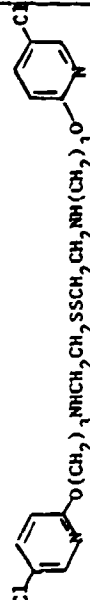
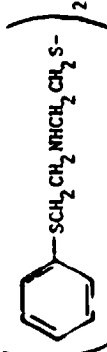
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{19}H_{37}N_3O_2S$	1189	$CH_3(CH_2)_6CONHC(=NH)NHCH_2CH_2SCO(CH_2)_6CH_3$	1	200 0				31
$C_{19}H_{40}O_2S$	2435	$CH_3(CH_2)_{15}SCH_2CHOHCH_2OH$ OR		400 0(T), 0(T)				12
$C_{19}H_{41}NO_3S_2$	2356	$CH_3(CH_2)_{16}NHCH_2CH_2SSO_3H$		100 0(T), 0(T)				161, 181, 239
$C_{19}H_{41}NS$	2047	$CH_3(CH_2)_{16}NHCH_2CH_2SR$	1	50 0(T)				211
$C_{20}H_{14}O_4S_5$	186034		58	75 $\pm$ 0		500 0		323
$C_{20}H_{16}N_4O_4S$	1896		6	250 0				204

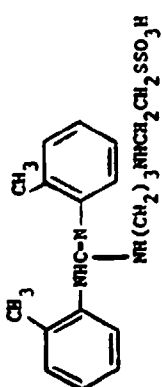
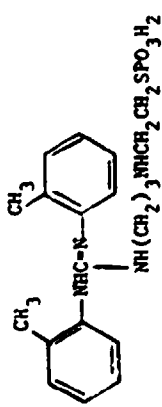
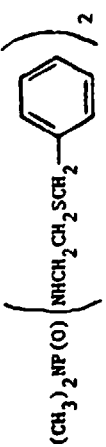
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{20}H_{23}NO_3S_2$	3231			300	0			107
$C_{20}H_{23}NO_3S_2$	3833			75	0(T), 0			226
$C_{20}H_{24}N_2O_3S$	1192			100	0			10
$C_{20}H_{24}N_2S_4$	791			400	+			216

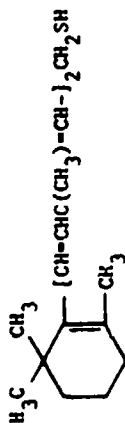
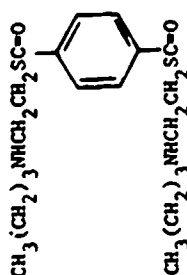
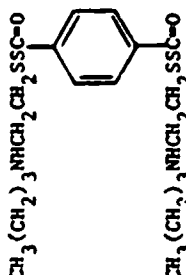
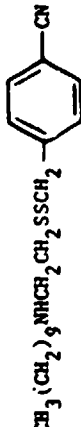
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Molecular Formula	VR Number	Structure	Salt Form	Antirradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{20}H_{24}N_4O_2S$	121223			30	0			325
$C_{20}H_{25}NO_3S_2$	3829			25	0			226
$C_{20}H_{25}NO_3S_3$	3357			60	0(T), 0			132
$C_{20}H_{25}NO_3S_2$	3271			75	0			195

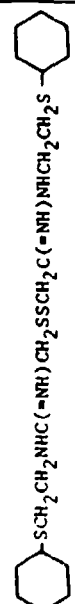
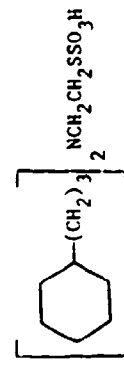
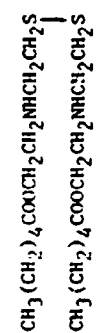
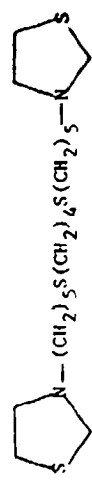
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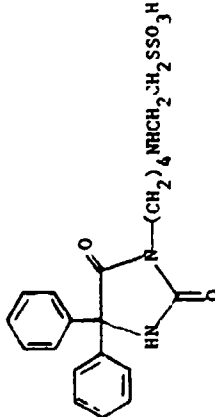
Molecular Formula	NR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{20}H_{26}N_4S_4$	62459			150	0			11
$C_{20}H_{27}NO_5S_2$	3239			800	0(T), 0			226
$C_{20}H_{27}N_3OS$	102269		24, 42	24	0			54, 240
$C_{20}H_{28}Cl_1N_4O_2S_2$	122964		2	50	0			224
$C_{20}H_{28}Br_2N_4O_2S_2$	80866			80	+(T), 0			224
$C_{20}H_{28}N_2S_4$	4617			50	0			268

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{20}H_{28}N_4O_3S_2$	27389			50	0			165,242
$C_{20}H_{29}N_4OPS_3$	2198			1050	0			127
$C_{20}H_{29}N_4OPS$	27393		44	60	0(T).0			165,243
$C_{20}H_{30}N_4O^+PS_2$	2253			250	0			127

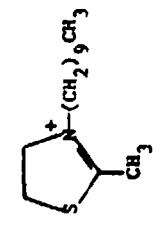
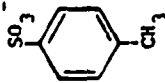
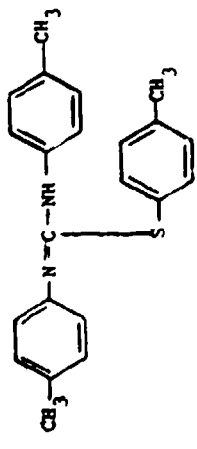
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{20}H_{30}S$	1915			400	0			12
$C_{20}H_{32}N_2O_2S_2$	175877		28	100	+0	200	0	71
$C_{20}H_{32}N_2O_2S_4$	175876		2	25	0			71
$C_{20}H_{32}N_2S_2$	27632		1	20	0			347

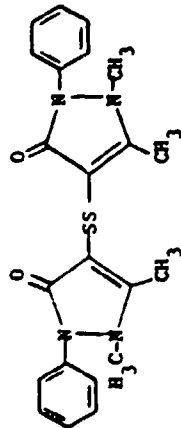
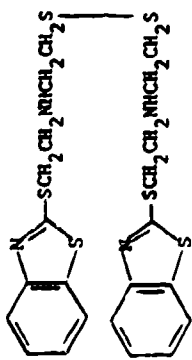
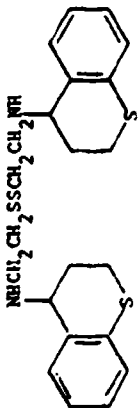
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{20}H_{34}N_4S_2$	181188		1	50	0(T), 0	300	0	70
$C_{20}H_{34}N_4S_2$	197516		2	10	+, 0	50	+, ±	120
$C_{20}H_{35}NOS_2$	26935			20	0			347
$C_{20}H_{35}NS_2$	27631		1	25	0			347
$C_{20}H_{38}N_4S_2$	151331		2	10	+(T), +, 0	80	+(T), +, ±, 0	98,299
$C_{20}H_{38}N_4S_2$	197490		2	15	+, 0	60	+, ±	120

Molecular Formula	UR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{20}H_{38}N_4S_2$	201723		2	7.5	0	100	0	269
$C_{20}H_{38}N_4S_4$	193681		2	5	+, +	100	+(T), +, +	126
$C_{20}H_{39}NO_3S_2$	2919			100	0			192
$C_{20}H_{40}N_2O_4S_2$	8191		2	75	0(T), 0			121
$C_{20}H_{40}N_2S_4$	132726		2	75	0	50	0	43

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg./Kg	Rating	Dose Mg./Kg	Rating	
$C_{20}H_{44}N_2S_2$	93	$CH_3(CH_2)_7NHCH_2CH_2SSCH_2CH_2NH(CH_2)_7CH_3$		100	0	500	0	11
$C_{20}H_{46}N_4O_2S_2$	3346	$H_2NCH_2(CH_2)_5NHCH_2CH_2NHCH_2CH_2S$ $HOCH_2(CH_2)_5NHCH_2CH_2NHCH_2CH_2S$	4	100	0			111
$C_{20}H_{48}Cl_2N_4S_4$	2355	$\{[(CH_3)_2CHNHCH_2CH_2S]_2\}_2HCl_2$		15	0			76
$C_{20}H_{50}N_4S_4S_2$	90707	$[HSCCH_2CH_2NHCH_2CH_2S]_4(CH_3)_2CH_2CH_2NHCH_2CH_2S-I_2$		40	4.0			244
$C_{21}H_{25}N_2O_5S$	7766			100	0			121
$C_{21}H_{25}N_3O_5S_2$	25329			90	0			324

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{21}H_{27}NO_3S$	2920		1	450	0(T)			192
$C_{21}H_{27}NO_3S_3$	3325			75	0			132
$C_{21}H_{29}NO_3S$	2996			800	0			192
$C_{21}H_{32}N_2S$	1914		1	44	0			12

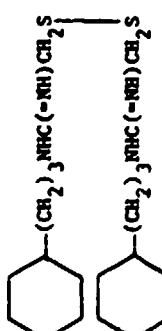
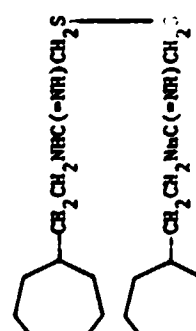
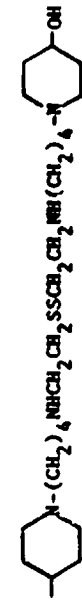
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{21}H_{35}NO_3S_2$	3541	 		25	0			195
$C_{21}H_{36}N_2S_2$	181189		1	30	0	200	0	70
$C_{21}H_{44}N_3O_4PS$	125049	 $NHCONH(CH_2)_{12}NHCH_2CH_2SP(O)(OH)_2$		10	0			1,243
$C_{21}H_{45}NS$	257		1	100	0			198
$C_{22}H_{22}N_2S$	1966			1200	G			204

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{22}H_{22}N_4O_2S_2$	359			250	0			340
$C_{22}H_{26}N_4S_6$	9718			200	0			268
$C_{22}H_{27}NO_3S$	6799		1	300	0			121
$C_{22}H_{28}N_2S_4$	121227			200	0			223

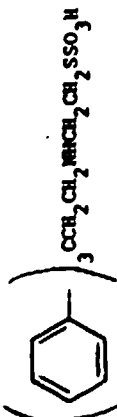
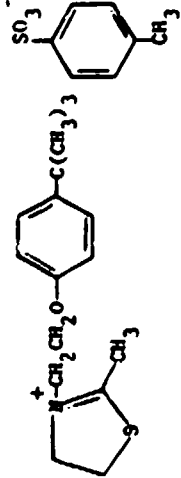
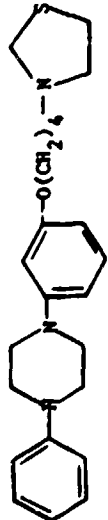
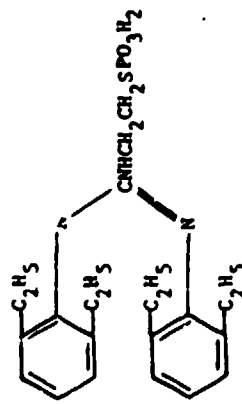
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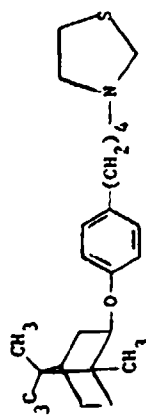
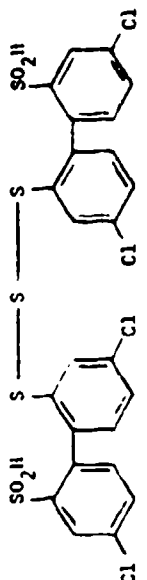
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{22}H_{34}N_2O_3S_2$	111479			10	0			280
$C_{22}H_{35}NO_4S_2$	143995			20	0(T), 0			43
$C_{22}H_{35}NS$	2399		1	50	0			124

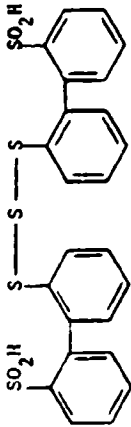
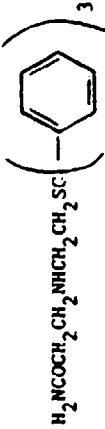
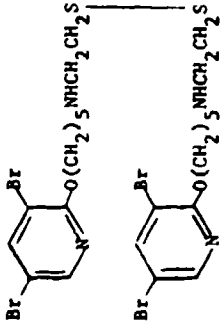
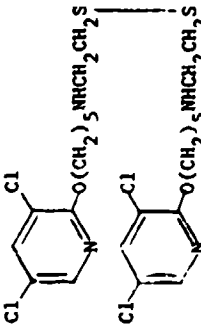
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Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{22}H_{42}N_4S_2$	166847		2	2.5 $\pm$ 0		30	+(T), $\pm$	98,299
$C_{22}H_{42}N_4S_2$	166848		2	15 0(T), 0		30	0(T), 0	98,299
$C_{22}H_{44}N_4O_4S_2$	2371			400 0				39
$C_{22}H_{46}N_4O_2S_2$	57857		4	20 0				313
$C_{22}H_{46}N_4S_2$	4283		4	25 0				111

622

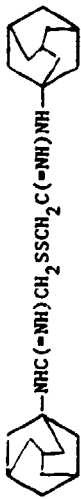
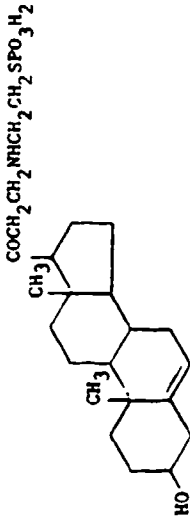
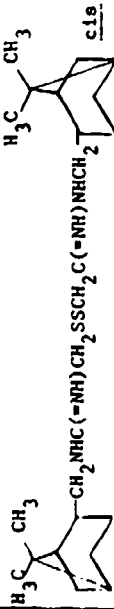
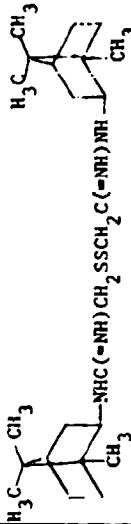
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{22}H_{50}M_4S_2$	165571	$[(C_2H_5)_2NCH_2CH_2CH_2CH(CH_3)NCH_2CH_2S-]_3$		10	0			206
$C_{23}H_{25}NO_3S_2$	9767				5	0		181
$C_{23}H_{31}NO_4S_2$	3285			100	0	150	0(T), 0	195
$C_{23}H_{31}N_3OS$	151334			200	0	500	0	148
$C_{23}H_{34}N_3O_3PS$	150070		42	25	±0			19,243

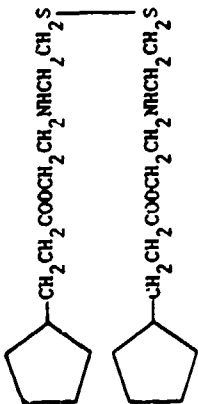
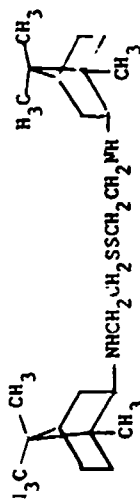
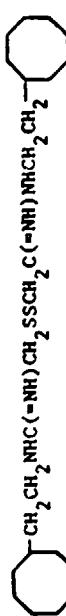
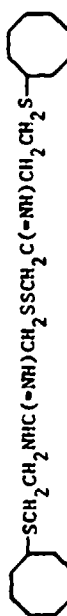
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{23}H_{35}NOS$	138770		1	20	0	175	0	43
$C_{23}H_{43}NO_5S$	9088	$CH_3(CH_2)_4COOCH_2$ $CH_3(CH_2)_4COOCH-CH_2NHCH_2CH_2SCO(CH_2)_4CH_3$	1	1000	0			121
$C_{23}H_{47}NO_5S_2$	9070	$CH_3(CH_2)_{17}OCOCH_2CH_2NHCH_2CH_2SSO_3H$		150	0(T), 0(T)			165, 242
$C_{23}H_{48}NO_5PS$	9052	$CH_3(CH_2)_{17}OCOCH_2CH_2NHCH_2CH_2SPO_3H_2$		50	0			165, 243
$C_{23}H_{50}N_3O_4PS$	27391	$CH_3(CH_2)_{17}NHCONHCH_2CH_2NHCH_2CH_2SPO_3H_2$		10	0			165, 24
$C_{28}H_{14}Cl_4O_6S_5$	188301		58	100	+0	500	+0	323

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{24}H_{18}O_4S_5$	187144		58	20	+,+,+,0	500	+,+	323
$C_{24}H_{26}N_2OS$	2711			100	0			141
$C_{24}H_{34}Br_4N_4O_2S_2$	99589		2	20	0			224
$C_{24}H_{34}Cl_4N_4O_2S_2$	159240		2	25	0	1500	0	224

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I. P.		P. O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{24}H_{35}NO_5S_4$	3834			25 0				226
$C_{24}H_{35}NO_5S_2$	3820			100 0				226
$C_{24}H_{35}NO_7S_2$	4110			800 0(T)				226
$C_{24}H_{36}Br_2N_4O_5S_2$	42762		2	90 ±0		600 0		224
$C_{24}H_{36}Br_2N_4O_5S_2$	104702		2	40 0				224
$C_{24}H_{36}Br_2N_4O_5S_2$	166849		2	40 0		150 0		92

626

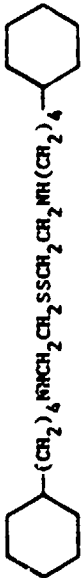
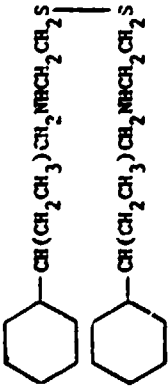
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{24}H_{38}N_4S_2$	201722		2	40	T,+,+,0	100	0(T),+,-	269
$C_{24}H_{40}NO_5PS$ 628	46361			320	0			145,243
$C_{24}H_{42}N_4S_2$	197487		2	7	+(T),+,+	50	+(T),+,0	120
$C_{24}H_{42}N_4S_2$	199739		2	8	+,+,-	30	+,+,-	120

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{24}H_{44}N_4O_4S_2$	26723		2	120	0(T), 0			121
$C_{24}H_{44}N_4S_2$	48680		2	100	0			223
$C_{24}H_{46}N_4S_2$	193564		2	1	$\pm$, 0	16	0	125
$C_{24}H_{46}N_4S_2$	199740		2	4	$\pm$, $\pm$	50	$\pm$ (T), $\pm$	120
$C_{24}H_{46}N_4S_4$	204163		2	3	0	30	$\pm$, 0	120

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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{24}H_{48}N_2O_2S_2$	33277		2	8	+			317

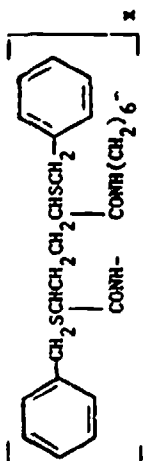
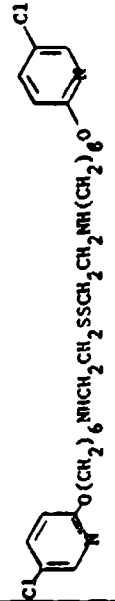
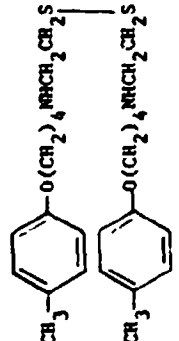
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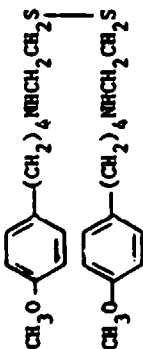
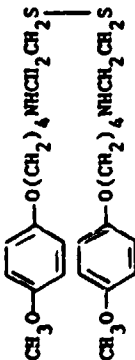
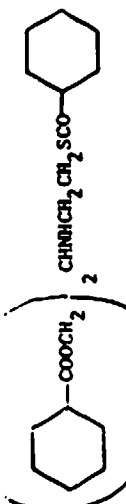
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{24}H_{48}N_2S_2$	3023		2	15	+0			324
$C_{24}H_{48}N_2S_2$	33713		2	25	0			324
$C_{24}H_{52}N_2O_2S_2$	2219	$CH_3(CH_2)_9N(CH_2CH_2SSO_2CH_2CH_2NH(CH_2)_9CH_3$	2	15	+1	400	0	203
$C_{24}H_{52}N_2S_2NI$	173120	$[CH_3(CH_2)_9N(CH_2CH_2S)]_2NI$		25	0			71
$C_{24}H_{52}N_2S_2$	159241	$CH_3(CH_2)_9N(CH_2CH_2SSCH_2CH_2NH(CH_2)_9CH_3$	26	10	+0	200	+0	89
$C_{24}H_{52}N_2S_2Zn$	169416	$[CH_3(CH_2)_9N(CH_2CH_2S)]_2Zn$		10	0			71
$C_{24}H_{52}N_2S_3$	139242	$[CH_3(CH_2)_9N(CH_2CH_2S)]_2S$	27	10	+0	400	0	1

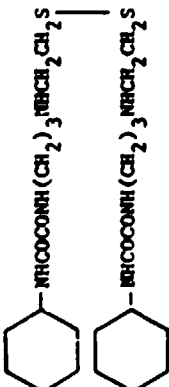
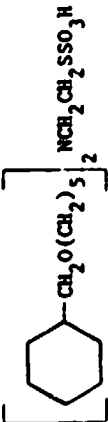
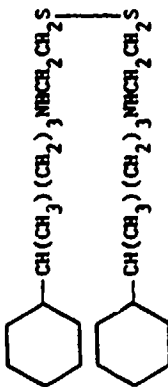
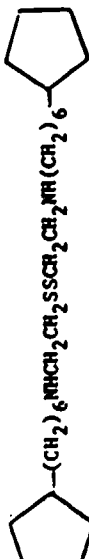
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{24}H_{52}N_4S_4$	139241	$CH_3(CH_2)_9NHCH_2CH_2SSSCH_2CH_2NH(CH_2)_9CH_3$	28	15	+0	400	0	1
$C_{24}H_{52}N_4O_4PS$	27302	$CH_3(CH_2)_{17}NHCONH(CH_2)_3NHCH_2CH_2SPO_3H_2$		20	0			165,243
$C_{24}H_{52}N_6O_4S_2$	2974	$CH_3(CH_2)_3OCH_2CH_2O(CH_2)_3N(C(=NH)NH_2)CH_2CH_2S$ $CH_3(CH_2)_3OCH_2CH_2O(CH_2)_3N(C(=NH)NH_2)CH_2CH_2S$		20	0			209
$C_{24}H_{54}N_4S_2$	3846	$CH_3(CH_2)_7NHCH_2CH_2NHCH_2CH_2S$ $CH_3(CH_2)_7NHCH_2CH_2NHCH_2CH_2S$	4	10	0			111
$C_{25}H_{54}NOSSl$	122951			50	0			244

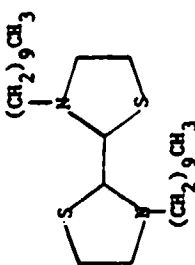
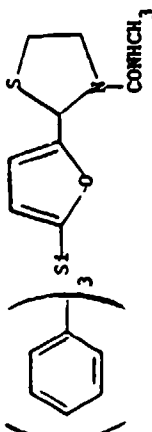
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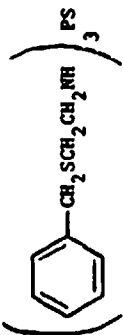
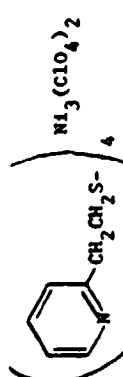
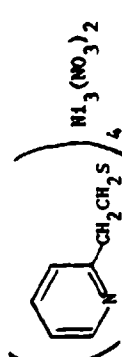
Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{25}H_{39}N_4O_3P_3S$	9053			50	0(T), 0			165.243
$C_{26}H_{26}N_4S_2$	197486		2	20	+, ±	100	+, 0	120
$C_{26}H_{26}N_4S_2$	199737		2	20	+, +, +	50	+, ±	120
$C_{26}H_{28}N_4O_2S_4$	175874		2	100	+, 0	300	0	71

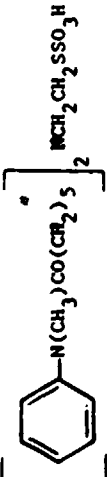
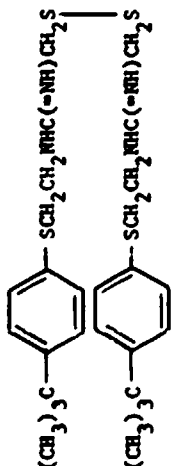
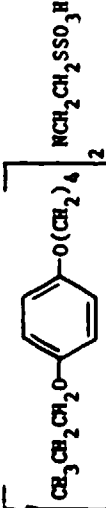
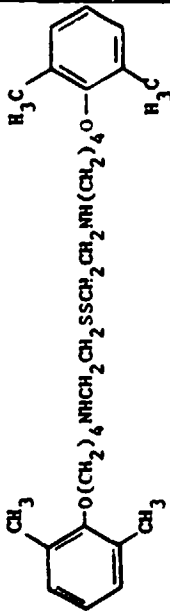
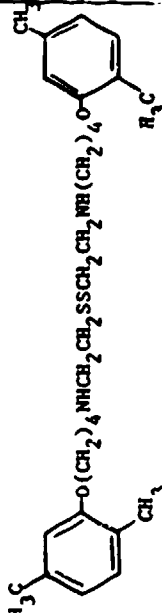
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{26}H_{34}N_2O_5S_2$	375			500	0			35
$C_{26}H_{40}Cl_2N_4O_5S_2$	106164			35	0(T), 0			224
$C_{26}H_{40}Br_2N_4O_5S_2$	91499		2	40	+(T), +			224
$C_{26}H_{40}N_4O_5S_2$	33895		2	160	+(T)			324

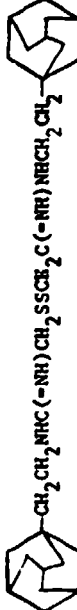
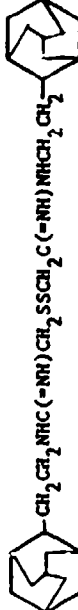
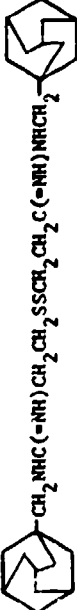
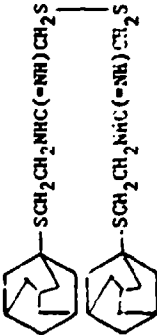
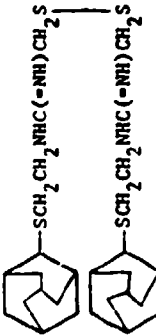
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				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{26}H_{40}N_2O_2S_2$	38491		2	53	+(T), ±			144
$C_{26}H_{40}N_2O_4S_2$	40643		2	320	+, +			324
$C_{26}H_{40}N_2O_4S_2$	193679		41	200	+, ±	800	0	126
$C_{26}H_{42}N_4S_2$	155419		2, 42	50	0(T), 0	100	+(T), +	299, 300
$C_{26}H_{42}N_4S_2$	181612		2, 42	10	+, ±	100	+(T), ±	265
$C_{26}H_{43}NO_5S$	8308		1	300	0			121

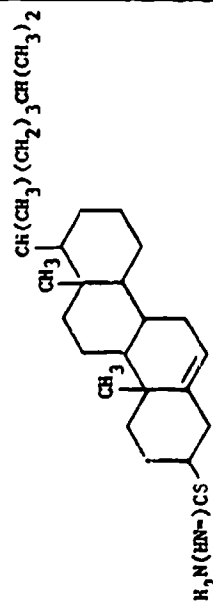
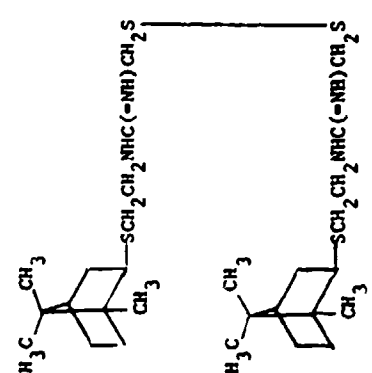
Molecular formula	IR Number	Structure	Salt Form	Antiradiation Activity				References
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{26}H_{44}N_2S_2$	148667			30	0			188
$C_{26}H_{48}N_6O_4S_2$	28445			75	0			323
$C_{26}H_{51}NO_5S_2$	3563			25	0			295
$C_{26}H_{52}N_2S_2$	36952		2	20	0			324
$C_{26}H_{52}N_2S_2$	36959		2	10	0(T)			324

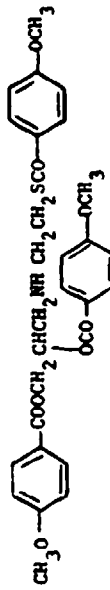
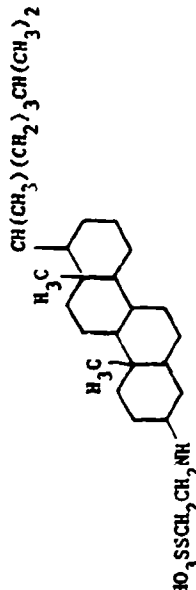
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				I.P.		P.G.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{26}H_{52}N_2S_2$	147955			400 0		300 0		43
$C_{26}H_{54}N_4S_4$	90240	$CH_3(CH_2)_9NHCSNHCH_2CH_2SSCH_2CH_2NHCSNH(CH_2)_9CH_3$		150 0(T), 0(T)				42
$C_{26}H_{56}N_2O_2S_2$	30462	$HOCH_2CHOH(CH_2)_9NHCH_2CH_2S$ $HOCH_2CHOH(CH_2)_9NHCH_2CH_2S$	2	80 0				313
$C_{27}H_{26}N_2O_2SSi$	124952			50 0				244

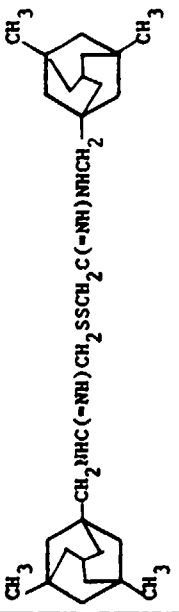
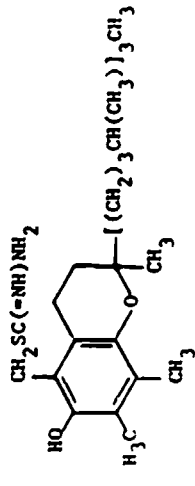
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				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/kg	Rating	
$C_{27}H_{36}N_3PS_4$	2254			1500	+ 0			127
$C_{27}H_{57}N_3O_3S_2$	32067	$CH_3(CH_2)_{17}NHCONH(CH_2)_6NHCH_2CH_2SSO_3H$		80	0			165, 242
$C_{27}H_{58}N_3O_3PS_2$	36248	$CH_3(CH_2)_{17}NHCSNH(CH_2)_6NHCH_2CH_2SPO_3H_2$		120	0			165, 243
$C_{28}H_{30}N_4O_2P_2S_2$	151328			300	0, ± 0			60
$C_{28}H_{32}Cl_2N_4Nl_3O_8S_4$	2221			19	0			272
$C_{28}H_{32}N_4Nl_3O_8S_4$	2224		44	9	0			272

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{28}H_{41}N_3O_5S_2$	4618			560	0			147
$C_{28}H_{42}N_4S_4$	171079		2	8	+0	150	+,-	299
$C_{28}H_{43}NO_7S_2$	3827			50	0			226
$C_{28}H_{44}N_3O_5S_2$	33714		2	320	0(T), 0			324
$C_{28}H_{44}N_3O_5S_2$	36159		2	15	0			324

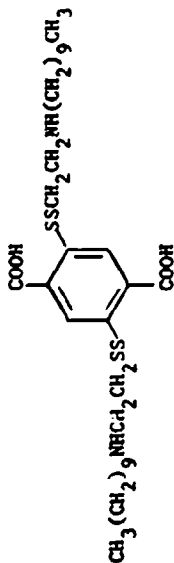
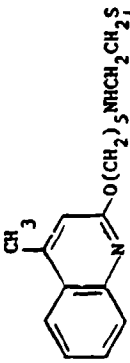
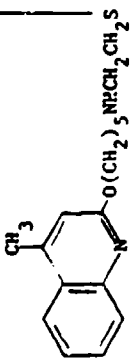
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{28}H_{46}N_4S_2$	196264		2	3	+0	50	+(T), +0	126
$C_{28}H_{46}N_4S_2$	199270		2	4	+0	80	+(T), +(T), +0	269
$C_{28}H_{46}N_4S_2$	201728		2	10	0	400	0	269
$C_{28}H_{46}N_4S_4$	169403		2,42	8	+±	75	+±	269
$C_{28}H_{46}N_4S_4$	193678		2	5	+0	20	+±, +0	269

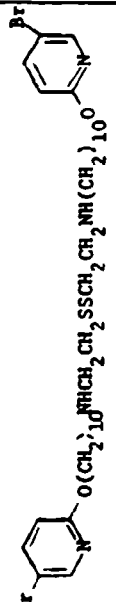
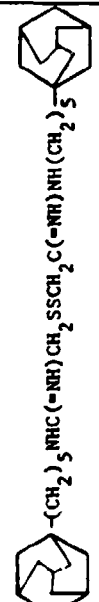
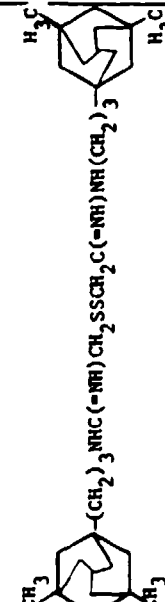
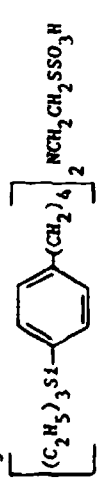
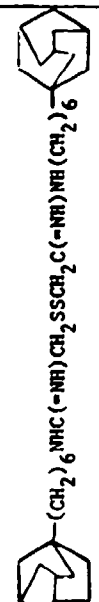
Molecular Formula	WK Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{28}H_{48}N_2S$	2261	 $H_2N(HN=)CS$ $CH(CH_3)(CH_2)_3CH(CH_3)_2$	27	200	0			11
$C_{28}H_{50}N_4S_4$	204157	 $SCH_2CH_2NHC(=NH)CH_2S$	2	4	+0	40	+,-	120

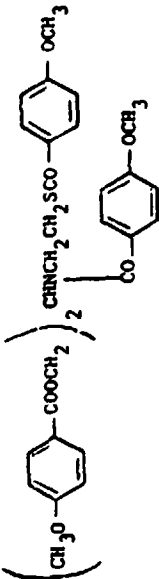
Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{28}H_{55}NO_3S$	8188	$CH_3(CH_2)_{10}COOCH_2CH_2NHCH_2CH_2SCO(CH_2)_{10}CH_3$	1	500 0				121
$C_{28}H_{57}N_3O_2S$	2194	$CH_3(CH_2)_{11}NHCONHCH_2CH_2SCONH(CH_2)_{11}CH_3$		100 0, ±				139
$C_{28}H_{62}N_4S_2$	3344	$CH_3(CH_2)_9NHCH_2CH_2NHCH_2CH_2SSCH_2CH_2NHCH_2CH_2NH(CH_2)_9CH_3$	4	15 0(T), 0				111
$C_{29}H_{31}NO_8S$	9090			400 0				121
$C_{29}H_{31}NO_8S$	9092		1	100 0				121
$C_{29}H_{53}NO_5S_2$	148665			100 0				223
$C_{30}H_{28}N_2O_5S_2$	159088			50 0		200 0		19

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{30}H_{50}N_4S_2$	158502		2,42	7.5	0(T),0	50	0	98,299
$C_{30}H_{50}N_4S_2$	166850		2,42	3	±,0	50	+(T),±,0	98,299
$C_{30}H_{50}N_4S_2$	199269		2	3	0	80	+(T),±	269
$C_{30}H_{50}N_4S_4$	193677		2	3	0	80	±,±,±,0	126
$C_{30}H_{52}N_4O_2S$	2434		1	400	0			12

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Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/kg	Rating	Dose Mg/Kg	Rating	
$C_{32}H_{56}N_2O_4S_4$	157298			100	0(T), 0(T), 0	600	0	245
$C_{32}H_{68}N_2S_4$	176095		13	200	0			11
$C_{34}H_{46}N_4O_2S_2$	40642		2	28	0			144

Molecular Formula	IR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{34}H_{56}Br_2N_4O_2S_2$	94537		2	15 0				224
$C_{34}H_{58}N_4S_2$	199617		2	10 0(T).0		200	+(T).+,-.0	269
$C_{34}H_{58}N_4S_2$	201726		2	3 0		300	+.0	269
$C_{34}H_{59}NO_3S_2S_2$	125678			10 0				244
$C_{34}H_{67}NO_2S$	190189	$CH_3(CH_2)_{14}CONHCH_2CH_2SCO(CH_2)_{14}CH_3$		60 (T).(T).0		600 0		126
$C_{36}H_{62}N_4S_2$	201725		2	8 0		600	0,+,-.0	269

Molecular Formula	WR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{37}H_{37}NO_{10}S$	9091			12.5	0			121
$C_{40}H_{80}N_2O_4S_2$	3332	$CH_3(CH_2)_5CHOH(CH_2)_{10}CONHCH_2CH_2S$ $CH_3(CH_2)_5CHOH(CH_2)_{10}CONHCH_2CH_2S$		1000	0			107
$C_{40}H_{80}N_2O_5S_2$	3334	$CH_3(CH_2)_7CHOHCHOH(CH_2)_7CONHCH_2CH_2S$ $CH_3(CH_2)_7CHOHCHOH(CH_2)_7CONHCH_2CH_2S$		1000	0			107
$C_{40}H_{84}N_2O_5S_2$	3333	$CH_3(CH_2)_5CHOH(CH_2)_{11}NHCH_2CH_2S$ $CH_3(CH_2)_5CHOH(CH_2)_{11}NHCH_2CH_2S$		80	0(T).0			107
$C_{40}H_{84}N_2O_4S_2$	3331	$CH_3(CH_2)_7CHOHCHOH(CH_2)_8NHCH_2CH_2S$ $CH_3(CH_2)_7CHOHCHOH(CH_2)_8NHCH_2CH_2S$	2	50	0			107

Molecular Formula	VR Number	Structure	Salt Form	Antiradiation Activity				Reference
				I.P.		P.O.		
				Dose Mg/Kg	Rating	Dose Mg/Kg	Rating	
$C_{42}H_{88}N_2S_{20}$	2425	$(CH_3)_2NN[(CH_2CH_2S)_{10}H]_2$		200	0			12
$C_{44}H_{40}N_6S_2$	1129	$(\text{quinoline-2-yl-CH}_2^-)_2NCH_2CH_2SSCH_2CH_2N(\text{CH}_2^-)_2$	42	800	0			215
$C_{48}H_{110}N_{12}S_{24}$	3088	$H(-SCH_2CH_2NHCH_2CH_2S-)_{12}H$	5,44	40	0			312
$C_{54}H_{72}N_9P_3S_6$	2258	$(\text{phenyl-CH}_2SCH_2CH_2NH)_2P(NHCH_2CH_2SCH_2\text{phenyl})_2$		1050	0			127

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SALTS AND OTHER FORMS OF COMPOUNDS TESTED

1. Hydrochloride
2. Dihydrochloride
3. Trihydrochloride
4. Tetrahydrochloride
5. Dodecahydrochloride
6. Hydrobromide
7. Dihydrohydrobromide
8. Trihydrobromide
9. Tetrahydrobromide
10. Hydroiodide
11. Dihydroiodide
12. Tetrahydroiodide
13. Hexahydrosulfide
14. Phosphate
15. Diphosphate
16. Triphosphate
17. Tetraphosphate
18. Thiophosphate
19. O,O-Diethylthiophosphate
20. O,O-Dimethyldithiophosphate
21. O,O-Diethyldithiophosphate
22. Diphenylthiophosphinate
23. Diphenyldithiophosphinate
24. Sulfate
25. Disulfate
26. Thiosulfate
27. *p*-Toluenesulfonate
28. Di-*p*-toluenesulfonate
29. Tri-*p*-toluenesulfonate
30. Tetra-*p*-toluenesulfonate
31. Methanesulfonate
32. Dimethanesulfonate
33. Formate

SALTS AND OTHER FORMS OF COMPOUNDS TESTED (Continued)

34. Acetate
35. Trichloracetate
36. Maleate
37. Fumarate
38. Succinate
39. Tartrate
40. Benzoate
41. Hemihydrate
42. Hydrate
43. Sesquihydrate
44. Dihydrate
45. Trihydrate
46. Tetrahydrate
47. Pentahydrate
48. Hexahydrate
49. Heptahydrate
50. Octahydrate
51. Nonahydrate
52. Calcium Salt
53. Lithium Salt
54. Dilithium Salt
55. Potassium Salt
56. Dipotassium Salt
57. Sodium Salt
58. Disodium Salt
59. Trisodium Salt
60. Ammonium Salt
61. Diammonium Salt
62. Triammonium Salt
63. Methylammonium Salt
64. *n*-Propylammonium Salt
65. Octammonium Salt
66. Cyclohexylammonium Salt

SALTS AND OTHER FORMS OF COMPOUNDS TESTED (Continued)

- 67. **Pyridinium Salt**
- 68. **2-Aminopyridinium Salt**
- 69. **1-Methyl-2-imino-1,2-dihydropyrimidinium Salt**
- 70. **1-Methyl-4-imino-1,4-dihydropyridinium Salt**
- 71. **1-Methyl-2-imino-1,2-dihydropyridinium Salt**
- 72. **Piperidinium Salt**
- 73. **Piperazinium Salt**
- 74. **Dipiperazinium Salt**
- 75. **Guanidinium Salt**
- 76. **Hydrazinium Salt**
- 77. **Methanolate**
- 78. **Ethanolate**
- 79. **Propanolate**
- 80. **Isopropanolate**
- 81. **Tetrafluoroborate**

REFERENCES

1. Esso Research and Engineering Company, Annual Technical Report No. 5, June 1, 1968-May 31, 1969, Contract No. DA-49-193-MD-2608.
2. Submitted by Southern Research Institute, Contract No. DA-49-193-MD-2028.
3. Purchased compound.
4. W.O. Foye and J. Mickles, *J. Med. Pharm. Chem.*, 5, 846 (1962).
5. Submitted by Vanderbilt University, Contract No. DA-49-193-MD-2030.
6. Submitted by Parke, Davis and Company, Contract No. DA-49-193-MD-2306.
7. Submitted by Dr. W.O. Foye, Massachusetts College of Pharmacy.
8. Submitted by Indiana University, Contract No. DA-49-193-MD-2108.
9. E.R. Atkinson, G.R. Handrick, R.J. Bruni, and F.E. Granchelli, *J. Med. Chem.*, 8, 29 (1965).
10. L. Bauer and T.L. Welsh, *J. Org. Chem.*, 27, 4382 (1962).
11. Submitted by Division of Medicinal Chemistry, Walter Reed Army Institute of Research.
12. Submitted by Eastman Kodak Company.
13. T.T. Conway, A. Shoeb, and L. Bauer, *J. Pharm. Sci.*, 57, 455 (1968).
14. Midwest Research Institute, Annual Progress Report No. 2, July 1, 1962-June 30, 1963, Contract No. DA-49-193-MD-2174.
15. Massachusetts College of Pharmacy, Final Report, June 1959-August 1963, Contract No. DA-49-193-MD-2029.
16. L. Bauer, K.S. Suresh and B.K. Ghosh, *J. Org. Chem.*, 30, 949 (1965).
17. D.L. Klayman, *J. Org. Chem.*, 30, 2454 (1965).
18. Submitted by E.D. Bergmann, Hebrew University, Jerusalem, Israel.
19. Esso Research and Engineering Company, Annual Technical Report No. 6, June 1, 1969-May 31, 1970, Contract No. DA-49-193-MD-2608.
20. Midwest Research Institute, Annual Progress Report No. 1, July 1, 1961-June 30, 1962, Contract No. DA-49-193-MD-2174.
21. University of Pennsylvania, Final Report, January 1961, Contract No. DA-49-193-MD-2035.

22. Southern Research Institute, Annual Progress Report No. 6968-1112-III, July 1, 1963-June 30, 1964, Contract No. DA-49-193-MD-2028.
23. Thiokol Chemical Corporation, Final Technical Report, September 1, 1959-August 31, 1962, Contract No. DA-49-193-MD-2053.
24. C.G. Overberger, H. Ringsdorf and B. Aochen, *J. Org. Chem.*, 30, 232 (1965).
25. Phillips Petroleum Company, Report for Period October 1, 1959-September 30, 1961, Contract No. DA-49-193-MD-2069.
26. Southern Research Institute, Three-year Progress Report No. 5386-1112, July 1, 1959-June 30, 1962, Contract No. DA-49-193-MD-2028.
27. Phillips Petroleum Company, Report for Period October 1, 1961-September 30, 1962, Contract No. DA-49-193-MD-2069.
28. Submitted by Kansas State University, Contract No. DA-49-193-MD-2026.
29. Rensselaer Polytechnic Institute, Annual Progress Report, September 1, 1961-August 31, 1962, Contract No. DA-49-193-MD-2058.
30. Submitted by Mr. J.H. Barnes, University of Reading, Berkshire, United Kingdom.
31. W.O. Foye, J. Mickles, R.N. Duvall and J.R. Marshall, *J. Med. Chem.*, 6, 509 (1963).
32. W.O. Foye, J.R. Marshall, and J. Mickles, *J. Pharm. Sci.*, 52, 406 (1963).
33. F.V. Morriss, J.J. Downs, B.A. Schutz, and A.F. Ferris, *J. Pharm. Sci.*, 52, 409 (1963).
34. T.P. Johnston, C.R. Stringfellow and A. Gallagher, *J. Org. Chem.*, 30, 2073 (1965).
35. Submitted by Polytechnic Institute of Brooklyn, Contract No. DA-49-193-MD-2032.
36. Arthur D. Little, Inc., Annual Report, October 1, 1960-October 1, 1961, Contract No. DA-49-193-MD-2071.
37. L. Bauer and K.R. Sandberg, *J. Med. Chem.*, 7, 766 (1964).
38. T.P. Johnston and A. Gallagher, *J. Org. Chem.*, 28, 1436 (1963).
39. Southern Research Institute, Annual Progress Report No. 6378-1112-II, July 1, 1962-June 30, 1963, Contract No. DA-49-193-MD-2028.
40. T.P. Johnston and A. Gallagher, *J. Org. Chem.*, 26, 3780 (1961).
41. Submitted by Quartermaster Research and Engineering Command, U.S. Army, Natick, MA.
42. D.L. Klayman and P.T. McIntyre, *J. Org. Chem.*, 33, 884 (1968).

43. Parke, Davis & Company, Annual Progress Report No. 7, 1 September 1968-31 August 1969 Contract No. DA-49-193-MD-2306.
44. Submitted by Phillip Petroleum Co., Contract No. DA-49-193-MD-2069.
45. D.L. Klayman, W.F. Gilmore and T.R. Sweeney, Chemistry and Industry, 1632 (1965).
46. D.H. Ball, J.M. Williams and L. Long, J. Org. Chem., 28, 1589 (1963).
47. G.R. Handrick, E.R. Atkinson, F.E. Granchelli, and R.J. Bruni, J. Med. Chem., 8, 762 (1965).
48. J.S. Dix and C.R. Bresson, J. Org. Chem., 32, 282 (1967).
49. S.D. Turk, R.P. Louthan, R.L. Cobb, and C.R. Bresson, J. Org. Chem., 27, 2846 (1962).
50. J.R. Piper and T.P. Johnston, J. Org. Chem., 29, 1657 (1964).
51. L. Bauer and K.S. Suresh, J. Org. Chem., 28, 1604 (1963).
52. D.L. Klayman, M.M. Grenan, and D.P. Jacobus, J. Med. Chem., 12, 723 (1969).
53. Submitted by Dr. T. Taguchi, Kyushu University, Fukuoka, Japan.
54. Esso Research and Engineering Company, Annual Technical Report No. 4, June 1, 1967-May 31, 1968, Contract No. DA-49-193-MD-2608.
55. S.-H. Chu and H.G. Mautner, J. Org. Chem., 27, 2899 (1962).
56. Esso Research and Engineering Company, Annual Technical Report No. 1, June 1, 1964-May 31, 1965, Contract No. DA-49-193-MD-2608.
57. J.R. Piper, C.R. Stringfellow, R.D. Elliot and T.P. Johnston, J. Med. Chem., 12, 236 (1969).
58. G.A. Grant, K.B. Shaw, and R.K. Miller, Defense Research Establishment Ottawa, Report No. 667, December 1972.
59. Minnesota Mining and Manufacturing Company, Final Report, December 1967, Contract No. DA-49-193-MD-2923.
60. Southern Research Institute, Final Report No. 9766-1112-VIII, August 1969, Contract No. DA-49-193-MD-2028.
61. Southern Research Institute Annual Progress Report No. A1098-2133-III, 1971-1972, Contract No. DADA-17-69-C-9033.
62. Southern Research Institute, Annual Report, No. 9235-1112-VII, July 1, 1967-June 30, 1968, Contract No. DA-49-193-MD-2028.
63. Submitted by Indiana University, Contract No. DA-49-193-MD-2096.

64. E. Campaigne and P.K. Nargund, *J. Med. Chem.*, 7, 132 (1964).
65. L. Field, B.J. Sweetman, and M. Bellas, *J. Med. Chem.*, 12, 624 (1969).
66. B.J. Sweetman, M. Bellas and L. Field, *J. Med. Chem.*, 12, 888 (1969).
67. Arthur D. Little, Inc., Final Report, October 1, 1961-December 1, 1962, Contract No. DA-49-193-MD-2071.
68. D.L. Klayman, M.M. Grenan and D.P. Jacobus, *J. Med. Chem.*, 12, 510 (1969).
69. Submitted by Union Carbide Corporation.
70. Esso Research and Engineering Company, Annual Technical Report No. 8, July 1, 1971-June 30, 1972, Contract No. DA-49-193-MD-2608.
71. Esso Research and Engineering Company, Annual Technical Report No. 7, July 1, 1970-June 30, 1971, Contract No. DA-49-193-MD-2608.
72. Rensselaer Polytechnic Institute, Annual Progress Report, September 1, 1962-August 31, 1963, Contract No. DA-49-193-MD-2058.
73. Midwest Research Institute, Final Report, July 1, 1961-December 1965, Contract No. DA-49-193-MD-2174.
74. D.L. Klayman, A. Sinning and G.W.A. Milne, *Acta Chem. Scand.*, 21, 217 (1967).
75. L. Bauer and T.L. Welsh, *J. Org. Chem.*, 26, 1443 (1961).
76. Ohio State University, Final Report, October 1, 1960-September 30, 1965, Contract No. DA-49-193-MD-2104.
77. Wyandotte Chemicals Corporation, Annual and Final Report, July 1, 1963-June 30, 1964, Contract No. DA-49-193-MD-2469.
78. W.O. Foye and J. Mickles, *J. Pharm. Sci.*, 53, 1030 (1964).
79. W.O. Foye and J. Mickles, *J. Progr. Biochem. Pharmacol.*, 1, 152 (Karger, Basel/New York 1965).
80. L. Field, T.F. Parsons and R.R. Crenshaw, *J. Org. Chem.*, 29, 918 (1964).
81. W.O. Foye, R.N. Duvall and J. Mickles, *J. Pharm. Sci.*, 51, 168 (1962).
82. Submitted by Esso Research and Engineering Company, Contract No. DA-49-194-MD-2608.
83. D.L. Klayman and G.W.A. Milne, *J. Org. Chem.*, 31, 2349 (1966).
84. J.R. Piper and T.P. Johnston, *J. Org. Chem.*, 32, 1261 (1967).
85. L. Field and Y.H. Khim, *J. Org. Chem.*, 37, 2710 (1972).
86. Submitted by Arthur D. Little, Inc., Contract No. DA-49-193-MD-2071.

87. Submitted by Rensselaer Polytechnic Institute, Contract No. DA-49-193-MD-2058.
88. Vanderbilt University, Annual Progress Report No. 4, October 1, 1964-September 30, 1965, Contract No. DA-49-193-MD-2030.
89. D.L. Klayman, D. Kenry, R.B. Silverman, J.E. Tomaszewski, and R.J. Shine, *J. Org. Chem.*, 36, 3681 (1971).
90. Submitted by Ohio State University, Contract No. DADA-17-72-C-0273.
91. J.D. Buckman and L. Field, *J. Org. Chem.*, 32, 454 (1967).
92. Parke, Davis & Company, Annual Progress Report No. 5, November, 1967, Contract No. DA-49-193-MD-2306.
93. R.W. Hart, R.E. Gibson, J.D. Chapman, A.P. Reuvers, B.K. Sinha, R.K. Griffith, and D.T. Witiak, *J. Med. Chem.*, 18, 323 (1975).
94. H.F. Herbrandson and R.H. Wood, *J. Med. Chem.*, 12, 620 (1969).
95. B. Buchner and G.C. Curtis, U.S. Patent 3,285,999, November 15, 1966. Assigned to Continental Oil Company.
96. G. Sosnovsky and P. Schneider, *Tetrahedron*, 19, 1313 (1963).
97. L. Bauer, C.L. Bell, K.R. Sandberg, and A.P. Parulkar, *J. Org. Chem.*, 32, 376 (1967).
98. R.D. Westland, M.M. Merz, S.M. Alexander, and L.S. Newton, *J. Med. Chem.*, 15, 1313 (1972).
99. University of Illinois, Final Report, Contract No. DA-49-193-MD-2212.
100. D.T. Witiak, B.K. Sinha, R.R. Ruffolo, and P.N. Patil, *J. Med. Chem.*, 16, 232 (1973).
101. Vanderbilt University, Annual Progress Report No. 3, October 1, 1963-September 30, 1964, Contract No. DA-49-193-MD-2030.
102. R.J. Wineman, M.H. Gollis, J.C. James, and A.M. Pomponi, *J. Org. Chem.*, 27, 4222 (1962).
103. J.C. James, R.J. Wineman and M.H. Gollis, U.S. Patent 3,341,577, September 12, 1967. Assigned to Monsanto Research Corporation.
104. J.C. James, R.J. Wineman and M.H. Gollis, U.S. Patent 3,352,918, November 14, 1967. Assigned to Monsanto Research Corporation.
105. G.R. Handrick and E.R. Atkinson, *J. Med. Chem.*, 9, 558 (1966).
106. L. Bauer and B.K. Ghosh, *J. Org. Chem.*, 30, 4298 (1965).
107. Phillip Petroleum Company, Report for the Period October 1, 1963-January 31, 1965, Contract No. DA-49-193-MD-2069.

108. J.C. James, R.J. Wineman and M.H. Gollis, U.S. Patent 3,462,429, August 19, 1969. Assigned to U.S.A.
109. J.R. Piper, C.R. Stringfellow and T.P. Johnston, J. Med. Chem., 9, 911 (1966).
110. H. Gershon and R. Rodin, J. Med. Chem., 8, 864 (1965).
111. Monsanto Research Corporation, Fifth Annual Progress Report, April 1, 1964-March 31, 1965, Contract No. DA-49-193-MD-2109.
112. Yale University, Annual Progress Report, January 1, 1961-December 31, 1961, Contract No. DA-49-193-MD-2106.
113. Arthur D. Little, Inc., Annual Report, October 1, 1959-October 1, 1960, Contract No. DA-49-193-MD-2071.
114. D.S. Tarbell, D.A. Buckley, P.P. Brownlee, R. Thomas, and J.S. Todd, J. Org. Chem., 29, 3314 (1964).
115. F.I. Carroll, J.D. White and M.E. Wall, J. Org. Chem., 28, 1240 (1963).
116. Southern Research Institute, Annual Progress Report No. 8679-1112-VI, July 1, 1966-June 30, 1967, Contract No. DA-49-193-MD-2028.
117. T.P. Johnston and C.R. Stringfellow, J. Med. Chem., 9, 921 (1966).
118. D.C. Dittmer, O.B. Ramsay and R.E. Spalding, J. Org. Chem., 28, 1273 (1963).
119. University of Illinois, Ph.D. Dissertation, T.T. Conway, 1967, Contract No. DA-49-193-MD-2047.
120. Esso Research and Engineering Company, Annual Technical Report No. 9, July 1, 1972-August 31, 1973, Contract No. DA-49-193-MD-2608.
121. Monsanto Research Corporation, Sixth Annual Progress Report, April 1, 1965-March 31, 1966, Contract No. DA-49-193-MD-2109.
122. Southern Research Institute, Annual Progress Report No. A1098-2133-III, 1971-1972, Contract No. DADA17-69-C-9033.
123. Southern Research Institute, Annual Progress Report No. 7468-1112-IV, July 1, 1964-June 30, 1965, Contract No. DA-49-193-MD-2028.
124. R.D. Westland, J.L. Holmes, B. Green, and J.R. Dice, J. Med. Chem., 11, 824 (1968).
125. Submitted by Yale University, Contract No. DA-49-193-MD-2106.
126. Southern Research Institute, Annual Progress Report No. SORI-KM-73-113 (1972-1973) Contract No. DADA17-69-C-9033.
127. G.C. Curtis and B. Buchner, U.S. Patent No. 3,286,002, November 15, 1966. Assigned to Continental Oil Co.

128. University of New Mexico, Final Report, March 16, 1960-March 15, 1962, Contract No. DA-49-193-MD-2105.
129. Submitted by Massachusetts College of Pharmacy, Contract No. DA-49-193-MD-2029.
130. G.W. Stacy, B.F. Barnett and P.L. Strong, *J. Org. Chem.*, 30, 592 (1965).
131. E. Campaigne and M.C. Wani, *J. Org. Chem.*, 29, 1715 (1964).
132. Midwest Research Institute, Annual Progress Report No. 3, July 1, 1963-October 31, 1964, Contract No. DA-49-193-MD-2174.
133. C.G. Overberger, H. Ringsdorf and N. Weinshenker, *J. Org. Chem.*, 27, 4331 (1962).
134. C.G. Overberger, H. Ringsdorf and B. Avchen, *J. Org. Chem.*, 30, 3088 (1965).
135. T.P. Johnston and A. Gallagher, *J. Org. Chem.*, 29, 2442 (1964).
136. T.P. Johnston and R.D. Elliott, *J. Org. Chem.*, 32, 2344 (1967).
137. D.L. Klayman, J.J. Maul, G.W.A. Milne, *J. Heterocycl. Chem.*, 5, 517 (1968).
138. L. Field and J.D. Buckman, *J. Org. Chem.*, 33, 3865 (1968).
139. A.F. Ferris and B.A. Schutz, *J. Org. Chem.*, 28, 3140 (1963).
140. University of Illinois, Annual Progress Report, April 1, 1967-March 31, 1968, Contract No. DA-49-193-MD-2047.
141. F.I. Carroll, H.M. Dickson and M.E. Wall, *J. Org. Chem.*, 30, 33 (1965).
142. B.J. Sweetman, M.M. Vestling, S.T. Ticaric, P.L. Kelly, and L. Field, *J. Med. Chem.*, 14, 868 (1971).
143. J.R. Piper and T.P. Johnston, *J. Org. Chem.*, 28, 981 (1963).
144. Parke, Davis & Company, Annual Progress Report No. 4. September 1, 1965-August 31, 1966, Contract No. DA-49-193-MD-2306.
145. Esso Research and Engineering Company, Annual Technical Report No. 3, June 1, 1966-May 31, 1967, Contract No. DA-49-193-MD-2608.
146. A.F. Ferris and B.A. Schutz, *J. Org. Chem.*, 29, 201 (1964).
147. Southern Research Institute, Annual Progress Report No. 7468-1112-IV, July 1, 1964-June 30, 1965, Contract No. DA-49-193-MD-2028.
148. Parke, Davis & Company, Annual Progress Report No. 8, September 1, 1969-August 31, 1970, Contract No. DA-49-193-MD-2306.
149. Indiana University, Final Report, October 1, 1960-January 1, 1961, Contract No. DA-49-193-MD-2108.

150. Kansas State University, Final Report, July 1, 1959-July 1, 1963, Contract No. DA-49-193-MD-2026.
151. H.F. Herbrandson and R.H. Wood, *J. Med. Chem.*, 12, 617 (1969).
152. University of California, Final Report, 1965, Contract No. DA-49-193-MD-2145.
153. J.D. Buckman, B.S. Johnson and L. Field, *Can. J. Microbiol.*, 12, 1263 (1966).
154. J.R. Piper and T.P. Johnston, U.S. Patent 3,892,824, July 1, 1975. Assigned to Southern Research Institute.
155. W.O. Foye and R.H. Zaim, *J. Pharm. Sci.*, 53, 906 (1964).
156. T.P. Johnston, C.R. Stringfellow and J.R. Piper, *J. Med. Chem.*, 11, 1256 (1968).
157. Parke, Davis & Company, Annual Progress Report No. 6, September 1, 1967-August 31, 1968, Contract No. DA-49-193-MD-2306.
158. J.R. Piper, L.McC. Rose and T.P. Johnston, *J. Org. Chem.*, 37, 4476 (1972).
159. D. Rosenthal, G. Brandrup, K.H. Davis, Jr., and M.E. Wall, *J. Org. Chem.*, 30, 3689 (1965).
160. University of Illinois, Final Report, May 31, 1965, Contract No. DA-49-193-MD-2212.
161. D.L. Klayman and W.F. Gilmore, *J. Med. Chem.*, 7, 823 (1964).
162. Michigan Chemical Corporation, Final Report, October 26, 1961, Contract No. DA-49-193-MD-2036.
163. S.D. Turk, R.P. Louthan, R.L. Cobb, and C.R. Bresson, *J. Org. Chem.*, 29, 974 (1964).
164. F.I. Carroll, J.D. White and M.E. Wall, *J. Org. Chem.*, 28, 1236 (1963).
165. Esso Research and Engineering Company, Annual Technical Report No. 2, June 1, 1965-May 31, 1966, Contract No. DA-49-193-MD-2608.
166. W.O. Foye and J.M. Kauffman, *J. Pharm. Sci.*, 57, 1614 (1968).
167. L. Field and R.B. Barbee, *J. Org. Chem.*, 34, 1792 (1969).
168. J.R. Piper, L.M. Rose, T.P. Johnston, and M.M. Grenan, *J. Med. Chem.*, 18, 803 (1975).
169. J.R. Piper, C.R. Stringfellow and T.P. Johnston, *J. Med. Chem.*, 12, 244 (1969).
170. T.P. Johnston and A. Gallagher, *J. Org. Chem.*, 28, 4305 (1963).
171. Ohio State University, Report No. 1092-3, January 1, 1963-June 30, 1964, Contract No. DA-49-193-MD-2104.

172. University of Cincinnati, Final Report, October 7, 1974, Contract No. DADA17-69-C-9107.
173. L. Field and J.D. Buckman, *J. Org. Chem.*, 33, 3467 (1967).
174. Rensselaer Polytechnic Institute, Final Technical Report, September 1, 1959-August 31, 1965, Contract No. DA-49-193-MD-2058.
175. Y.H. Khim and L. Field, *J. Org. Chem.*, 37, 2714 (1972).
176. Submitted by Dr. D.C. Dittmer, Syracuse University.
177. H. Barrera and R. E. Lyle, *J. Org. Chem.*, 27, 641 (1962).
178. L. Goodman and J.E. Christensen, *J. Org. Chem.*, 28, 2610 (1963).
179. Phillips Petroleum Company, Report for Period October 1, 1962-September 30, 1963, Contract No. DA-49-193-MD-2069.
180. J.E. Christensen and L. Goodman, *J. Org. Chem.*, 28, 2995 (1963).
181. D.L. Klayman, M.M. Grenan and D.P. Jacobus, *J. Med. Chem.*, 13, 251 (1970).
182. W.M. zuReckendorf and W.A. Bonner, *J. Org. Chem.*, 26, 4596 (1961).
183. O.L. Salerni, R.N. Clark and B.E. Smart, *J. Chem., Soc. (C)*, 645 (1966).
184. Submitted by University of New Hampshire, Contract No. DA-49-193-MD-2034.
185. University of Rochester, Final Report, Contract No. DA-49-193-MD-2031.
186. American Agricultural Chemical Company, Final Technical Report, July 1, 1961-June 30, 1962, Contract No. DA-49-193-MD-2175.
187. T.L. Fridinger and J.E. Robertson, *J. Med. Chem.*, 12, 1114 (1969).
188. Southern Research Institute, Annual Progress Report No. 10125-2133-I (1969-1970), Contract No. DADA17-69-C-9033.
189. A.P. Parulkar and L. Bauer, *J. Heterocycl. Chem.*, 3, 472 (1966).
190. University of Illinois, Annual Progress Report, July 1, 1964-June 30, 1965, Contract No. DA-49-193-MD-2047.
191. W.O. Foye and D.H. Kay, *J. Pharm. Sci.*, 51, 1098 (1962).
192. Parke, Davis & Company, Annual Progress Report No. 2, August 1, 1963-August 31, 1964, Contract No. DA-49-193-MD-2306.
193. Vanderbilt University, Annual Progress Report No. 2, July 1, 1961-September 30, 1963, Contract No. DA-49-193-MD-2030.
194. J.E. Christensen and L. Goodman, *J. Org. Chem.*, 28, 847 (1963).

195. A.F. Ferris, O.L. Salerni and B.A. Schutz, *J. Med. Chem.*, 9, 391 (1966).
196. L. Field, H. Hürle, T.C. Owen, and A. Ferretti, *J. Org. Chem.*, 29, 1632 (1964).
197. L. Field and H.K. Kim, *J. Org. Chem.*, 31, 597 (1966).
198. Michigan Chemical Corporation, Annual Report, July 1959-July 1960, Contract No. DA-49-193-MD-2036.
199. Monsanto Research Corporation, Fourth Annual Progress Report, April 1, 1963-March 31, 1964, Contract No. DA-49-193-MD-2109.
200. Submitted by the University of Rochester, Contract No. DA-94-193-MD-2031.
201. L. Field, T.C. Owen, R.N. Crenshaw, and A.W. Bryan, *J. Am. Chem. Soc.* 83, 4414 (1961).
202. D.L. Klayman, J.D. White and T.R. Sweeney, *J. Org. Chem.*, 29, 3737 (1964).
203. L. Field, A. Ferretti, R.R. Crenshaw, and T.C. Owen, *J. Med. Chem.*, 7, 39 (1964).
204. Vanderbilt University, Annual Report No. 1, July 1, 1969-June 30, 1970, Contract No. DADA17-69-C-9128.
205. J.R. Piper, C.R. Stringfellow and T.P. Johnston, *J. Med. Chem.*, 9, 563 (1966).
206. Southern Research Institute, Annual Progress Report No. 10125-2133-II (1970-1971), Contract No. DADA17-69-C-9033.
207. Monsanto Research Corporation, Second Annual Progress Report, April 1, 1961-March 31, 1962, Contract No. DA-49-193-MD-2109.
208. L. Field, A. Ferretti, and T.C. Owen, *J. Org. Chem.*, 29, 2378 (1964).
209. Parke, Davis & Company, Annual Progress Report No. 1, October, 1963, Contract No. DA-49-193-MD-2306.
210. S.J. Brois, J.F. Pilot and H.W. Barnum, *J. Am. Chem. Soc.*, 92, 7629 (1970).
211. Monsanto Research Corporation, Third Annual Progress Report, April 1, 1962-March 31, 1963, Contract No. DA-49-193-MD-2109.
212. Submitted by University of Illinois, Contract No. DA-49-193-MD-2212.
213. J.A. Montgomery, R.W. Balsiger, A.L. Fikes, and T.P. Johnston, *J. Org. Chem.*, 27, 195 (1962).
214. L. Bauer and L.A. Gardella, Jr., *J. Org. Chem.*, 26, 82 (1961).
215. T.P. Johnston and A. Gallagher, *J. Org. Chem.*, 27, 2452 (1962).
216. Submitted by Monsanto Research Corporation, Contract No. DA-49-193-MD-2109.
217. Submitted by the University of Pennsylvania, Contract No. DA-49-193-MD-2035.

218. J.E. Christensen, and L. Goodman, J. Am. Chem. Soc., 83, 3827 (1961).
219. Submitted by Dr. H.P. Tipnis, University of Bombay, India.
220. Submitted by Stanford University, Contract No. DA-49-193-MD-2070.
221. University of Illinois, Final Report, August 16, 1959-March 31, 1969, Contract No. DA-49-193-MD-2047.
222. Kansas State University, Annual Report, July 1, 1961-June 30, 1962, Contract No. DA-49-193-MD-2026.
223. R.D. Elliot, J.R. Piper, C.R. Stringfellow, and T.P. Johnston, J. Med. Chem., 15, 595 (1972).
224. R.D. Westland, R.A. Cooley, J.L. Holmes, J.S. Hong, M.H. Lin, M.H. Zwiesler, and M.M. Grenan, J. Med. Chem., 16, 319 (1973).
225. L. Field, W.S. Hanley and I. McVeigh, J. Med. Chem., 14, 995 (1971).
226. R.D. Westland, J.L. Holmes, M.L. Mouk, D.D. Marsh, R.A. Cooley, and J.R. Dice, J. Med. Chem., 11, 1190 (1968).
227. L. Goodman and J.E. Christensen, J. Am. Chem. Soc., 83, 3823 (1961).
228. L. Goodman and J.E. Christensen, J. Org. Chem., 28, 158 (1962).
229. W.M. zuReckendorf and W.A. Bonner, Tetrahedron, 19, 1721 (1963).
230. J.R. Piper, L.M. Rose, A.G. Laseter, T.P. Johnston, and M.M. Grenan, J. Med. Chem., 17, 1119 (1974).
231. Monsanto Research Corporation, First Annual Progress Report, April 1, 1960-March 31, 1961, Contract DA-49-193-MD-2109.
232. Submitted by Kansas State University, Contract No. DA-49-193-MD-2026.
233. B. Buchner and G.G. Curtis, U.S. Patent 3,286001, November 15, 1966. Assigned to Continental Oil Company.
234. S.F. Thames and L.H. Edwards, J. Heterocycl. Chem., 5, 115 (1968).
235. Phillip Petroleum Company, Final Report, October 1, 1959-January 31, 1965, Contract No. DA-49-193-MD-2069.
236. Indiana University, Final Technical Report, February 1, 1960-August 30, 1963, Contract No. DA-49-193-MD-2096.
237. E. Campaigne and P.K. Norgund, J. Org. Chem., 29, 224 (1964).
238. D.L. Klayman, R.J. Shine and A.S. Murray, J. Pharm. Sci., 59, 1515 (1970).
239. D.L. Klayman and W.F. Gilmore, U.S. Patent 3,655,715, April 11, 1972. Assigned to U.S.A.

240. S.J. Brois and H.W. Barnum, U.S. Patent 3,574,698, April 13, 1971. Assigned to Esso Research and Engineering Company.
241. S.J. Brois, U.S. Patent 3,476,833, November 4, 1969. Assigned to Esso Research and Engineering Company.
242. S.J. Brois, U.S. Patent 3,468,925, September 23, 1969. Assigned to Esso Research and Engineering Company.
243. S.J. Brois, U.S. Patent 3,501,557, March 17, 1970. Assigned to Esso Research and Engineering Company.
244. Submitted by University of Southern Mississippi, Contract No. DA-49-193-MD-2910.
245. L. Field and P.R. Engelhardt, J. Org. Chem., 35, 3647 (1970).
246. L. Field and P.M. Giles, Jr., J. Med. Chem., 13, 317 (1970).
247. L. Field and H.K. Kim, J. Med. Chem., 9, 397 (1966).
248. L. Field, T.F. Parsons and D.E. Pearson, J. Org. Chem., 31, 3550 (1966).
249. B.-T. Ho and W.C. McCarthy, J. Pharm. Sci., 56, 648 (1967).
250. W.C. McCarthy and B.-T. Ho, J. Org. Chem., 26, 4110 (1961).
251. C.W. Schimelpfenig, J. Org. Chem., 27, 3323 (1962).
252. S.-H. Chu and H.G. Mautner, J. Org. Chem., 26, 4498 (1961).
253. University of Cincinnati, Final Report, October 7, 1974, Contract No. DADA17-69-C-9107.
254. Polytechnic Institute of Brooklyn, Annual Progress Report, March 1, 1962-February 28, 1963, Contract No. DA-49-193-MD-2032.
255. P.K. Srivastava and L. Field, J. Med. Chem., 16, 428 (1973).
256. J.R. Piper, C.R. Stringfellow and T.P. Johnston, J. Med. Chem., 14, 350 (1971).
257. T.C. Owen, C.L. Gladys and L. Field, J. Chem. Soc., 501 (1962).
258. L. Field and Y.H. Khim, J. Med. Chem., 15, 312 (1972).
259. T.P. Johnston, C.R. Stringfellow and A. Gallagher, J. Org. Chem., 27, 4068 (1962).
260. N.E. Heimer and L. Field, J. Org. Chem., 35, 3012 (1970).
261. General Aniline and Film Corporation, Final Report, July 1, 1961-September 30, 1962, Contract No. DA-49-193-MD-2173.
262. W.A. Bonner and W.M. zuReckendorf, Chem. Ber., 94, 225 (1961).

263. Washington State University, Final Technical Report, August 1, 1959-August 31, 1965, Contract No. DA-49-193-MD-2049.
264. Southern Research Institute, Annual Progress Report, No. 7920-1112-V, July 1, 1965-June 30, 1966, Contract No. DA-49-193-MD-2028.
265. Submitted by University of Illinois, Contract No. DA-49-193-MD-2047.
266. University of Arizona, Final Technical Report, September 1, 1959-August 31, 1961, Contract No. DA-49-193-MD-2033.
267. Stanford Research Institute, Annual Summary Report and Final Report, October 1, 1962-March 31, 1964, Contract No. DA-49-193-MD-2068.
268. R.D. Elliot and T.P. Johnston, J. Med. Chem., 12, 253 (1969).
269. Southern Research Institute, Final Report, DORI-KM-73-201, 1969-1973, Contract No. DADA-69-C-9033.
270. J.R. Piper, C.R. Stringfellow and T.P. Johnston, J. Med. Chem., 14, 1212 (1971).
271. S.F. Thames and L.H. Edwards, J. Chem. Soc. (C), 2339 (1968).
272. Submitted by Purdue University, Contract No. DA-49-193-MD-2107.
273. University of Maryland, Final Technical Report, July 1, 1964-March 31, 1966, Contract No. DA-49-193-MD-2609.
274. D.L. Klayman, R.J. Shine and J.D. Bower, J. Org. Chem., 37, 1532 (1972).
275. University of Illinois, Annual Progress Report, July 1, 1966-March 31, 1967, Contract No. DA-49-193-MD-2047.
276. R.R. Crenshaw and L. Field, J. Org. Chem., 30, 175 (1965).
277. Submitted by Dr. E.L. Eliel, University of Notre Dame.
278. Submitted by Southern Research Institute, Contract No. DA-49-193-MD-2028.
279. L. Field, C.B. Hoelzel and J.M. Locke, J. Am. Chem. Soc., 84, 847 (1962).
280. J.M. Barton and L. Bauer, Can. J. Chem., 47, 1233 (1969).
281. W.M. zuReckendorf and W.A. Bonner, Chem. Ber., 94, 2431 (1961).
282. University of Illinois, Annual Progress Report, July 1, 1965-March 31, 1966, Contract No. DA-49-193-MD-2047.
283. R. Mani, W.M. zuReckendorf and W.A. Bonner, Chem. Ber., 95, 1000 (1962).
284. James S. Todd, Ph.D. Thesis, University of Rochester, 1960.
285. R.D. Westland, U.S. Patent 3,453,309, July 1, 1969. Assigned to Parke, Davis & Company.

286. R.D. Westland, U.S. Patent 3,413,330, November 26, 1968. Assigned to Parke, Davis & Company.
287. D.L. Klayman and W.F. Gilmore, U.S. Patent 3,595,899, July 27, 1971. Assigned to U.S.A.
288. J.R. Piper and T.P. Johnston, J. Org. Chem., 33, 636 (1968).
289. Submitted by the University of Maryland, Contract No. DA-49-193-MD-2609.
290. Submitted by Dr. Lamar Field, Vanderbilt University.
291. G.M. Singerman, J.L. Kimura and R.N. Castle, J. Heterocycl. Chem., 3, 74 (1966).
292. S.F. Thames and J.E. McClesky, J. Heterocycl. Chem., 4, 371 (1967).
293. R.D. Westland, U.S. Patent 3,408,381, October 29, 1968. Assigned to Parke, Davis & Company.
294. R.D. Westland, U.S. Patent 3,453,308, July 1, 1969. Assigned to Parke, Davis & Company.
295. Parke, Davis & Company, Annual Progress Report No. 3, February 1966, Contract No. DA-49-193-MD-2306.
296. Submitted by Stanford Research Institute, Contract No. DA-49-193-MD-2068.
297. A.F. Ferris, O.L. Salerni and B.A. Schutz, J. Chem. Soc., 6650 (1965).
298. R.D. Westland, M.H. Lin, R.A. Cooley and M.L. Zwiesler, J. Med. Chem., 16, 328 (1973).
299. R.D. Westland, M.M. Merz, S.M. Alexander, L.S. Newton, L. Bauer, T.T. Conway, J.M. Barton, K.K. Khullar, P.B. Devdhar, and M.M. Grenan, J. Med. Chem., 15, 1313 (1972).
300. University of Illinois, Annual and Progress Report, April 1, 1969-August 31, 1970, Contract No. DADA17-69-C-9110.
301. The Epoxylite Corporation, Final Progress Report, April 1, 1966-March 31, 1967, Contract No. DA-49-193-MD-2914.
302. S.L. Holton, J.E. Christensen, O.P. Crews, and L. Goodman, Can. J. Chem., 42, 2147 (1964).
303. Submitted by Ohio State University, Contract No. DA-49-193-MD-2104.
304. K.V. Bhat and W.C. McCarthy, J. Pharm. Sci., 53, 1545 (1964).
305. Submitted by Dr. E.E. Sissman, University of Kansas.
306. J.R. Piper, C.R. Stringfellow, R.D. Elliott, and T.P. Johnston, J. Med. Chem., 14, 345 (1971).

307. Midwest Research Institute, Annual Progress Report No. 4, November 1, 1964-December 31, 1965, Contract No. DA-49-193-MD-2174.
308. Vanderbilt University, Annual Report No. 7, October 1, 1967-September 30, 1968, Contract No. DA-49-193-MD-2030.
309. T.F. Parsons, J.D. Buckman, D.E. Pearson, and L. Field, *J. Org. Chem.*, 30, 1923 (1965).
310. University of New Mexico, Final Report, August 1, 1964-December 31, 1965, Contract No. DA-49-193-MD-2645.
311. K.K. Khullar and L. Bauer, *J. Org. Chem.*, 36, 3038 (1971).
312. Rensselaer Polytechnic Institute, Annual Progress Report, September 1, 1963-August 31, 1964, Contract No. DA-49-193-MD-2058.
313. Monsanto Research Corporation, Seventh Annual Report, April 1, 1966-March 31, 1967, Contract No. DA-49-193-MD-2109.
314. W.O. Foye, E.F. Lasala, M. Georgiadis, and W.L. Meyer, *J. Pharm. Sci.*, 54, No. 4, 557 (1965).
315. R.D. Westland, E.R. Karger, B. Green, and J.R. Dice, *J. Med. Chem.*, 11, 84 (1968).
316. L. Field and T.F. Parsons, *J. Org. Chem.*, 30, 657 (1965).
317. J.D. Buckman, M. Bellas, H.K. Kim, and L. Field, *J. Org. Chem.*, 32, 1626 (1967).
318. Submitted by Dr. H.P. Tipnis, University of Bombay, India.
319. G.W. Stacy, A.J. Papa, F.W. Villaescusa, and S.C. Ray, *J. Org. Chem.*, 29, 607 (1964).
320. G.W. Stacy, A.J. Papa and S.C. Ray, *J. Org. Chem.*, 26, 4779 (1961).
321. Yale University, Terminal Report, Contract No. DA-49-193-MD-2106.
322. P.K. Srivastava and L. Field, *J. Org. Chem.*, 37, 4196 (1972).
323. P.K. Srivastava, L. Field and M.M. Grenan, *J. Med. Chem.*, 18, 798 (1975).
324. R.D. Westland, M.L. Mouk, J.L. Holmes, R.A. Cooley, Jr., and J.S. Hong, *J. Med. Chem.*, 15, 968 (1972).
325. R.D. Elliot and T.P. Johnston, *J. Med. Chem.*, 12, 507 (1969).
326. University of New Hampshire, Final Report, September, 1962-September, 1963, Contract No. DA-49-193-MD-2034.
327. A.F. Ferris and B.A. Schutz, *J. Org. Chem.*, 28, 71 (1963).
328. L. Field and W.B. Lacefield, *J. Org. Chem.*, 31, 599 (1966).

- 329. Submitted by Drug Development Branch, Drug Research and Development Program, Division of Cancer Treatment, National Cancer Institute.
- 330. Submitted by the Prevention of Deterioration Center, National Research Council.
- 331. D. Horton and M.L. Wolfrom, *J. Org. Chem.*, 27, 1794 (1962).
- 332. M.L. Wolfrom, W.A. Cramp and D. Horton, *J. Org. Chem.*, 29, 2302 (1964).
- 333. L. Field and P.M. Giles, Jr., *J. Org. Chem.*, 36, 309 (1971).
- 334. W.M. zuReckendorf and W.A. Bonner, *J. Org. Chem.*, 26, 5241 (1961).
- 335. M.L. Wolfrom, W.A. Cramp and D. Horton, *J. Org. Chem.*, 30(19), 3056 (1965).
- 336. O.L. Salerni and R.N. Clark, *J. Med. Chem.*, 9, 778 (1966).
- 337. Submitted by University of Kentucky, Contract No. DA-49-193-MD-2054.
- 338. Submitted by Dr. Leonard M. Rice, Howard University.
- 339. L. Field, H.K. Kim and M. Bellas, *J. Med. Chem.*, 10, 1166 (1967).
- 340. Submitted by Thiokol Chemical Corporation, Contract No. DA-49-193-MD-2053.
- 341. K.R. Henery-Logan and S. Abdou-Sabet, *J. Org. Chem.*, 38, 916 (1973).
- 342. T.P. Johnston and A. Gallagher, *J. Org. Chem.*, 28, 1305 (1963).
- 343. D.L. Klayman and T.S. Woods, *Internat. J. of Sulfur Chemistry*, 8, 5 (1973).
- 344. W.A. Bonner and P.I. McNamee, *J. Org. Chem.*, 26, 2554 (1961).
- 345. D. Horton and M.L. Wolfrom, *J. Org. Chem.*, 27, 1794 (1962).
- 346. M.L. Wolfrom, D. Horton and D.H. Hutson, *J. Org. Chem.*, 28, 845 (1963).
- 347. M. Bellas, D.L. Tuleen and L. Field, *J. Org. Chem.*, 32, 2591 (1967).
- 348. P.K. Srivastava, L. Field and M.M. Grenan, *J. Med. Chem.*, 18, 798 (1975).
- 349. D.L. Klayman, *Biochemical Preparations*, J.H. Law, Editor, Vol. 13, 84, John Wiley and Sons, New York, NY, 1971.
- 350. L. Field, W.S. Handley, I. McVeigh, and Z. Evans, *J. Med. Chem.*, 14, 202 (1971).

STRUCTURE-ACTIVITY RELATIONSHIPS

The decision having been made to study the modification of MEA and MFA in an attempt to increase effectiveness and decrease toxicity, compounds were synthesized which involved modification of the amino moiety, the backbone between the N and S atoms and the thiol moiety.

In this S-A discussion an attempt will be made to draw broad conclusions where there seems to be sufficient support from the data. While this will often be difficult and incomplete because of the scattering of structural variations and the nature of the testing, the effort would seem to be justified because such generalization would be useful in a field where thinking is usually centered upon individual compounds. The activities referred to will be those from intraperitoneal administration of the compound unless oral administration is specifically indicated.

The Thiol Blocking Concept

Early in the drug development program the data indicated that an active compound would possess a sulfhydryl or a physiologically potential sulfhydryl group separated by two or three carbon atoms from a basic nitrogen function. Blocking of the thiol group in a way such that it became unavailable metabolically, *e.g.*, as a thioether, resulted in inactive compounds. It also became apparent that the relative activity and toxicity within a series of otherwise identical compounds can be markedly affected by the nature of the sulfhydryl-latentiating group; thus the order of toxicity and activity of one series of compounds may be the complete reverse of another with the identical sulfur-blocking groups. Three such series are shown, by way of illustration, in Tables 1, 2 and 3; other series could be similarly developed. Doses and approximate LD₅₀s (ALD₅₀) are presented on a molar basis to facilitate comparison. In the series of amide derivatives shown in Table 1 the thiol was the least toxic and the phosphorothioate the most toxic whereas in the series of diamines shown in Table 2, the phosphorothioate was the least toxic and the disulfide* the most toxic with the thiol the next most toxic. In comparing the activities of members of the series of Table 1 it is seen that the thiol was most active, effecting good protection at about one fourth of its ALD₅₀ whereas the phosphorothioate gave no protection at nearly one half of its ALD₅₀. With the diamines, on the other hand, Table 2, the phosphorothioate was the most active, giving

*It should be kept in mind that the unblocking of a thiol in the form of a disulfide, unlike the unblocking of other thiol functions, yields two molecules of thiol for each disulfide molecule if the unblocking is a reductive process.

complete protection at less than one third of the ALD_{50} and appreciable protection at about one seventh of the ALD_{50} ; the thiol on the other hand was inactive at one third of its ALD_{50} and the thiosulfuric acid (Bunte salt) was inactive at two thirds of its ALD_{50} . In contrast to the highly polar, water soluble series of diamines, Table 2, where the Bunte salt was relatively non toxic compared to the disulfide, the introduction of the highly lipid solubilizing decyl group produced a series, Table 3, in which the Bunte salt, WR-1607, was the most toxic member of the series, being on the order of 6 times as toxic as the thiol; in contrast, in the amide series, Table 1, the Bunte salt was only about 1.3 times as toxic as the thiol and in the diamine series, Table 2, it was only about one half as toxic. The decyl compound, WR-1607, was however, in contrast to the very polar diamine, WR-9720, Table 2, very active both relative to the ALD_{50} and in the absolute (mg) dose. It was thus necessary to synthesize and test a number of the sulfur-blocked analogs for each promising moiety that was attached to the amino group of MEA. Altogether about 50 different sulfur-blocking moieties were examined in the course of the program but the highest activity was usually found among the thiols, disulfides, thiosulfuric acids or phosphorothioic acids. These classes, therefore, received the most attention in the synthetic effort and necessarily form the basis of the structure-activity analysis.

The data presented above indicate that the mode of action of these compounds is complex. Because of the greater *in vivo* lability of the various thiol-blocked moieties compared to the N-substituted end of the MEA molecule, the blocked thiols have been considered as prodrugs, the blocking group controlling such factors as the rate of *in vivo* release of the active thiol, the toxicity, and membrane passage; thus the blocked thiols were associated with the drug delivery system whereas the N-substituents were associated with modification of the inherent antiradiation properties of MEA. While such a compartmentalization of effects is a gross over-simplification, the concept was useful in the practical program. Substituents on the thiol-blocking group far removed from the actual thiol-blocking bond can also have a marked effect. For example WR-77,548, $CH_3CONHCH_2CH_2SS(CH_2)_3CH_2SO_2H$, gave essentially complete protection at about 1/15th of its ALD_{50} whereas WR-76,844, the corresponding sulfonic acid, $CH_3CONHCH_2CH_2SS(CH_2)_3CH_2SO_3H$, gave only fair protection at two thirds of its ALD_{50} and was inactive at one third of this dose.

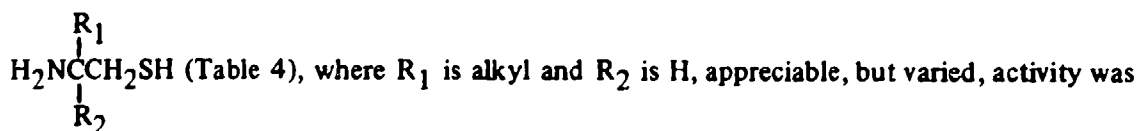
3-Aminopropanethiols and Derivatives

In general, the data indicate that, in the aminoalkylthiol-type compounds, a two carbon chain between N and S confers optimal antiradiation activity. Increasing the chain

length beyond three carbons abolishes activity. With relatively few, but perhaps important, exceptions, discussed below, activity of the 3-aminopropanethiol types was low or non-existent. This generalization has been amply verified by testing numerous compounds in which 3-aminopropanethiol has been substituted both on the nitrogen and on the backbone, including compounds in which vicinal carbons in the backbone have been incorporated in a cycloalkane moiety; one exception, *cis*-2-mercapto-cyclooctylmethylamine, WR-192,526, did have appreciable, but not outstanding activity. The 3-aminopropanethiosulfuric acids, including those with a variety of substitutions, were also inactive. However, when a hydroxy group is inserted in the backbone, *i.e.*, 2-hydroxy-3-aminopropanethiosulfuric acid, a number of the simple *N*-*n*-alkyl derivatives of the hydroxylated form, but not the parent hydroxylated compound, showed activity. There seemed to be no pattern to the activity and the best compound was the *N*-octyl homolog, WR-142,911. The 3-aminopropylphosphorothioates followed the same pattern as the Bunte salts. However, the parent compound, WR-35,978, while inactive at tolerated doses, can be converted to very active derivatives by the introduction of a 2-hydroxy or 2-amino group on the backbone, WR-77,913 and WR-114,391 respectively. The former compound, WR-77,913, was particularly noteworthy. In addition to these modifications, the substitution of certain aminoalkyl groups on the amino group of the parent, *i.e.*, $\text{RNH}(\text{CH}_2)_n\text{NHCH}_2\text{CH}_2\text{CH}_2\text{SPO}_3\text{H}_2$, resulted in very active compounds (Table 39). Finally, there can be activity when the basic nitrogen function is three carbons removed from the sulfur if the basic function is an amidino group (Table 46).

Backbone Substitutions (Tables 4-10)

If the amino function does not terminate a chain in the aminoethanethiols, *i.e.*,



retained when R_1 is not larger than propyl; where R_1 is alkyl and R_2 is methyl, activity was lowered or abolished and when R_1 and R_2 form part of a carbocycle, activity was also abolished. The same generalization can be made for the corresponding thiosulfates (Table 5); however, in this class the compounds were inactive when R_1 is larger than ethyl. The two carbocyclic thiosulfates, WR-2649 and WR-2579, did show some activity as opposed to the corresponding thiols but this activity was at the expense of higher test doses which were used because of the lower toxicity. In general, the toxicity of the thiosulfates was lower than the thiols and comparable to the phosphorothioates (Table 6). The data on the latter class are

very limited but, aside from the greater activity of the parent compound compared to the parents of the other two classes, the trend in activity would seem to be the same.

When the thiol function does not terminate a chain, *i.e.*, $\text{H}_2\text{NCH}_2\overset{\text{R}_1}{\underset{\text{R}_2}{\text{C}}}\text{SH}$ (Table 7),

activity was abolished when R_1 is larger than methyl and R_2 was hydrogen. Stereoisomerism seems to be unimportant. When the thiosulfate group does not terminate a chain, *i.e.*,

$\text{H}_2\text{NCH}_2\overset{\text{R}_1}{\text{C}}\text{HSSO}_3\text{H}$ (Table 8), the compounds were, again, less toxic than the corresponding thiols but activity ended early in the series.

When neither the amino nor the sulfur function terminates the chain, *i.e.*,

$\text{H}_2\text{NCH}\overset{\text{R}_1}{\underset{\text{R}_2}{\text{C}}}\text{SH}$, activity was absent. However, when R_1 and R_2 form part of a carbocycle, *e.g.*, 2-aminocyclobutanethiol, 2-aminocyclopentanethiol, etc., activity was restored. The activity fell off as ring size increased from cyclobutane through cyclohexane; *cis* 2-aminocyclobutanethiol had about the same activity as aminoethanethiol. The *cis* isomer seemed somewhat better than the *trans* in each case. There are not enough thiosulfates of this type to draw conclusions.

Functionalization of the alkyl group R_1 and R_2 in the $\text{H}_2\text{NC}(\text{R}_1\text{R}_2)\text{CH}_2\text{SH}$ series either by hydroxylation or thiolation lead to profound changes in toxicity and reactivity (Table 9). Thus when R_1 is $-\text{CH}_2\text{SH}$, the 1,3-propanedithiols, the compounds were generally quite toxic regardless of the nature of R_2 and more toxic than the corresponding unfunctionalized compounds in the few cases where comparisons can be made. When both R_1 and R_2 are hydroxymethyl, the compound was much superior to the corresponding one where the methyl groups are unsubstituted. The compound with an aminoalkyl group, WR-193,702, was highly active but this type of structure was explored only in the corresponding phosphorothioate series (Table 10). The compounds in the latter group were all highly active and of relatively low toxicity. While there is a paucity of the corresponding functionalized derivatives in the thiosulfuric acid series, a comparison of WR-2389, WR-2917 and WR-176,241, Tables 9 and 10, illustrates what is generally true: the water soluble polyhydroxyalkyl or polyaminoalkyl types are least active when the sulfur-containing function is in the form of a thiosulfuric acid. There are insufficient data of the type $\text{H}_2\text{NCH}_2\text{C}(\text{R}_1\text{R}_2)\text{SH}$ where R_1 and R_2 are functionalized to justify comment.

The *n*-alkylaminoethanethiosulfuric acids, $\text{RNHCH}_2\text{CH}_2\text{SSO}_3\text{H}$, showed an interesting triphasic pattern of activity as R is increased in the homologous series to 18 carbons (Table 11). The first three members of the series, R = methyl, ethyl and propyl were active. The next four, R = C₄ thru C₇ were inactive but activity was again evident in the series when R = C₈ thru C₁₀. With further extension of the series the activity disappeared except for some low activity shown by the R = C₁₃ and R = C₁₄ homologues. This homologous series of *n*-alkylaminoethanethiosulfuric acids progresses from the more water soluble members to the water insoluble; the toxicity increased as the molecular weight increased and reached a maximum in the range of R = C₁₀-C₁₄, after which it diminished. The most active members of the series, other than the first few members, were characterized by a relatively high efficiency in terms of milligrams required for protection when the compounds are administered parenterally. They were inactive when administered orally which suggests that they are not well absorbed. The efficient intraperitoneal activity is compromised somewhat by the relatively high toxicity. A number of the alkylaminoethanethiosulfuric acids have been found to produce a generalized vasoconstriction and myocardial depression in the dog which resulted in hypertension, slowed heart rate and narrowed pulse pressure. In addition, the *n*-decyl homolog (R = C₁₀), WR-1607, was found to possess β -adrenergic blocking action.

In a fair number of examples, with only two exceptions, isomerization of the normal alkyl chain of the alkylaminoethanethiosulfuric acids resulted in retention or enhancement of activity in those cases where the corresponding normal chain was active, *i.e.*, in the octyl-, nonyl-, and decyl- aminothiosulfuric acids (Table 12). In the only example of the isomerization of the undecyl chain, WR-2411, activity was found in contrast to the normal isomer. No activity was seen in compounds where the nitrogen was tertiary, either in the dialkylamino type or when the nitrogen atom was incorporated in a ring. N-acylated compounds were also inactive. The introduction of an alkyl or phenyl group on the backbone of the aminoethanethiosulfuric moiety had no effect on the activity of those compounds that were inactive without such substituents; of the few active compounds that were so modified, WR-1607, WR-258 and WR-3548, activity was abolished.

The corresponding homologous series of *n*-alkylaminoethanethiols, $\text{RNHCH}_2\text{CH}_2\text{SH}$, (Table 11), closely, but not exactly, paralleled the pattern of activity of the Bunte salts. Thus the activity in the short chain homologues does not extend as far in the thiol series as in the Bunte salt series, *i.e.*, R = C₁ versus C₃. In addition, the second peak of activity extends from R = C₈ thru R = C₁₁; further elongation of the chain produced no third peak of low activity as in the Bunte salt series.

As is the case with the alkylaminoethanethiosulfuric acids isomerization of a normal alkyl chain with 7 or fewer carbons in the alkylaminoethanethiol series had no salutary effect (Table 12). Unfortunately there is a paucity of thiols with isomerized alkyl groups containing 8, 9, 10 or 11 carbons for comparison with the thiosulfuric acids. However, the few data that are available suggest that they are not as toxic nor are they as active as the thiols with normal chains. The introduction of an alkyl, hydroxyalkyl, or phenyl on the two-carbon backbone of the aminoethanethiol moiety in the *n*-alkylaminoethanethiols abolished activity. Tertiary aminoethanethiols, either the dialkylamino type or those in which the N atom is a part of a ring were uniformly inactive.

The alkylaminoethylphosphorothioates, as a series, were not studied to the extent of the thiosulfuric acids or thiols. From limited data it would appear that, in their pattern of activity, they were more like the thiosulfuric acids than the thiols. In the few direct comparisons possible in the range of alkyl groups that confer activity, they were, at least, as active or more active than the corresponding thiosulfuric acids. Compound WR-75232, for example, was particularly active.

Relatively few of the alkylaminoethanedisulfides were obtained. The potent disulfide, cystamine, WR-352, was comparable in activity to the corresponding thiol, MEA. As a class there are insufficient data to draw any generalizations.

Phenalkylaminoethanethiols and Derivatives (Tables 13 and 14)

The homologous series of phenalkylaminoethanethiols, (Table 13), $C_6H_5(CH_2)_nNHCH_2CH_2SH$, $n = 0-4$, were consistently more toxic than the corresponding thiosulfuric acids, and, with the exception of WR-3233, had little or no intraperitoneal activity at the doses tested; they were not tested orally. The homologous series, with or without substituents on the phenyl ring, was not carried beyond $n = 4$ because the corresponding thiosulfuric acid series seemed to hold more promise, e.g., WR-2397 and WR-36956 (Table 13) vs WR-2754 and WR-3050 (Table 14) respectively. In the homologous series of unsubstituted phenalkylaminoethanethiosulfuric acids, Table 14, $C_6H_5(CH_2)_nNHCH_2CH_2SSO_3H$, $n = 0-6$, the first three members of the series were inactive but the other four compounds were active. The optimum chain length was $n = 4$ and $n = 5$, both compounds showing good activity. The introduction of methyl or ethyl groups on the phenyl ring of the phenbutyl homolog brought about a dramatic increase in toxicity (10 to 20 times as toxic) with retention of activity at the correspondingly low doses at which the compounds were tested. The introduction of a 4-OCH₃ substituent in the phenyl ring of the phenalkylaminoethanethiosulfuric acids had, in general, a salutary effect on activity, especially notable in the phenbutyl analog. Branching of

the two-carbon spacer between the unsubstituted phenyl ring and the nitrogen of the thiosulfuric acids introduced no activity. No noteworthy activity was found for the relatively few of these Bunte salts that were tested orally. The one that showed the best activity when administered intraperitoneally, WR-3050, was inactive when administered orally.

Hydroxyalkylaminoethanethiols and Derivatives (Tables 15-20)

Monohydroxylation of the alkyl chain of the alkylaminoethanethiols, regardless of the position of the hydroxyl group or of branching of the chain, reduced the toxicity of the compound compared with the unsubstituted alkyl derivative (Table 15). The hydroxyethyl and hydroxypropyl derivatives were active in contrast to the unsubstituted derivatives but were tested at higher doses because of the lower toxicity. Analogs with R groups containing more than 3 carbon atoms and bearing a single hydroxyl, with the strange exception of the 5-hydroxypentyl analog, WR-2469, were inactive. When the nitrogen atom was made tertiary, either by simple alkylation or doubling the hydroxyalkyl moiety, all activity was abolished.

In general when more than one hydroxyl is introduced into the alkyl chain (Table 15) toxicity is further reduced and testing can be done at higher doses. The polyhydroxyalkyl derivatives all gave appreciable activity, WR-2347 being outstanding. The number of possible position isomers is so large compared to the number of compounds tested that it is essentially impossible to generalize. It would appear, nevertheless, in comparing the hydroxy and polyhydroxy derivatives that isomerism does play an appreciable role.

A comparison of the activity of the hydroxyalkyl-substituted derivatives as a function of the sulfur-blocking group can be made only tentatively because there were many more thiols synthesized than disulfides, thiosulfuric acids or phosphorothioic acids and a direct comparison of a series of compounds bearing the same N-alkyl moiety, but having all four sulfur-blocking groups was usually not possible (Tables 16, 17 and 18). However, it does seem clear that, as a class, the hydroxyalkylthiosulfuric acids are the least toxic and the disulfides the most toxic with the thiols and phosphorothioic acids occupying an intermediate position. With respect to activity the phosphorothioates, as a class, would appear to be the most active while the disulfides and thiosulfuric acids are the least active. Interesting too was the di(hydroxyethyl) derivative (WR-4122, $ALD_{50} = 1750$) because of the activity and much lower toxicity compared to the unsubstituted dialkyl analog.

No noteworthy activity was seen in the hydroxyalkyl class of compounds when they were administered orally regardless of the type of thiol blocking. The most active thiol when administered intraperitoneally, WR-2347, was inactive when administered orally.

Simple alkylation of the hydroxyl group of hydroxyethyl-, or 3-hydroxypropylaminoethanethiols, WR-698 or WR-1119, increases toxicity and abolishes activity (Table 19). However, if the alkylating group contains a hydroxyl group, activity is retained with no increase in toxicity. There are too few of the alkoxyalkylaminoethanethiosulfuric acids to draw conclusions with respect to hydroxylation of the O-alkyl group but O-alkylation of the long chain ω -hydroxyalkyl derivatives does apparently increase toxicity compared to the analog with the free hydroxyl group. The cycloalkoxyaminoethanethiols (Table 20), with the exception of the first two compounds, WR-3069 and WR-4111, exhibited fair to good activity over the entire range of structural variations when administered intraperitoneally. About one-half of the active compounds were tested by oral administration and were found to be inactive, without exception.

Phenoxyalkylaminoethanethiols and Derivatives (Tables 21-24)

In the phenoxyalkyl series many more aminoethanethiosulfuric acids (Table 22) were synthesized than were thiols (Table 21) or disulfides (Table 23). Because of this situation, comparisons of the three sulfur-blocking groups has to be tentative. However, when comparisons are possible, the thiosulfuric acids, in general, were the least toxic. When the aryloxy moiety is attached to the nitrogen by a short chain, *i.e.*, 2 or 3 carbons, the compounds were invariably inactive or of very low activity, regardless of the nature of the substituents on the ring. The most active compounds of the thiosulfuric acid series when administered intraperitoneally were found when the insulating methylene chain was 4, 5 or 6 carbons in length ($n = 4,5,6$); the type of substituent on the ring also markedly effected activity. High activity did not carry over to oral administration. There are an insufficient number of compounds in the thiol or disulfide series to extend such a generalization. The thiols were of such modest activity that the activity by oral administration was not investigated. Very few phosphorothioates in this series were synthesized. The unsubstituted phenoxy analogs insulated by 2, or 3 carbons were, like their thiol and thiosulfuric acid counterparts, inactive. Where direct comparison was possible in the aryloxybutyl series, *e.g.*, the $2,6-(CH_3)_2C_6H_3-O(CH_2)_4-$, $2-(CH_3)_2CHC_6H_4-O(CH_2)_4-$ and the $3-(CH_3)_2N-4-CH_3C_6H_3-O(CH_2)_4-$ analogs, (WR Nos. 117 914, 117 917 and 138 736 respectively), the phosphorothioates were more toxic than the thiosulfuric acids and were inactive. Branching of the insulating chain resulted in inactive compounds as did doubling the aryloxyalkyl moiety on nitrogen so as to make the amine tertiary. Although a few of the compounds in the aryloxybutyl series showed some oral activity, the class, in general, was inactive.

When the aminoethanethiol moiety in a number of the phenoxyalkylaminoethanethiols was tied up as an N-substituted thiazolidine in an attempt to increase oral activity, any intraperitoneal activity that was present in the corresponding thiosulfuric was abolished or greatly diminished and no oral activity was evident (Table 24). A direct comparison of the phenoxyalkylthiazolidines with the pyridyloxyalkylthiazolidines cannot be made because of the presence of different substituents on the pyridyl and phenyl rings.

Cycloalkylalkylaminoethanethiols and Derivatives (Tables 25-28)

Only a few compounds were synthesized with carbocyclic rings larger than seven members in the cycloalkylalkylaminoethanethiosulfuric acid series. For normal alkyl spacers of 3, 4, 5, or 6 carbons, toxicity increases as the ring size is increased from 4 to 7 carbons (Table 25). For any given ring size from 4 to 7 carbons, there is a point where the compounds become appreciably more toxic as the length of the normal spacer increases. This point is reached sooner as the size of the ring increases. The most active compounds with unbranched alkyl spacers were clustered in the area of spacers of 4, 5, and 6 carbons and rings of 4, 5 or 6 carbons. Branching of the spacer chain between the cycloalkyl moiety and the nitrogen atom can bring about a marked change in effectiveness and toxicity; compare, for example, WR-2571 with WR-3562; WR-2942 with WR-6136 and WR-7466; and WR-2691 and WR-6403 with WR-6400 (Table 24). Thus the antiradiation activity would seem to depend to some extent upon the total number of carbon atoms in the spacer rather than entirely upon the distance between the ring and nitrogen. Although there are little data, there is the suggestion that the isomerism of the spacing group when both distance and total number of carbons is held constant may play a role; compare, *e.g.*, WR-6136, 7466 and WR-7467.

Most of the cycloalkylalkylaminoethanethiosulfuric acids that were tested by oral administration were inactive and those that were active were only fair at best even when administered at a relatively high dose (Table 25). Oral data did not correlate well with that obtained from intraperitoneal administration.

There were not as many cycloalkylalkylaminoethanethiols synthesized as there were the corresponding thiosulfuric acids. In general, the former were more toxic and less active than the latter. There were not enough of the disulfides or phosphorothioates synthesized to allow generalizations to be made. Intraperitoneal data for these classes are tabulated in Tables 26, 27 and 28.

Heteroalkylaminoethanethiols and Derivatives

Regardless of the type of sulfur blocking, *i.e.*, aminoethane-thiols, -thiosulfuric acids, -phosphorothioates or -disulfides, compounds representing a variety of heterocycles attached directly or through short alkyl chains to the nitrogen atom of the aminoethyl moiety, with attachment involving either a carbon or the hetero atom of the heterocycle, showed little or no activity in general. There were a few exceptions which showed moderate activity but no explanation or correlation was apparent; note, for example, 3-piperidinylmethylaminoethane phosphorothioate, WR 176,256, morpholinoethyldisulfide, WR 177,475 and 2-quinoxalinylaminoethanethiosulfuric acid, WR 176,606.

Pyridyl- and quinolyloxyalkylaminoethanethiols and Derivatives (Tables 29-31)

Derivatives of the 2-aminoethanethiol-type compounds in which a 2-pyridyloxyalkyl or 2-quinolyloxyalkyl group was attached to the nitrogen proved to be an interesting and active series of compounds.

In a series of 2-pyridyloxyalkylaminoethanethiosulfuric acids (Table 29), the length of the alkyl spacer as well as the nature and position of the ring substituent had a marked effect on activity. A chain of 5 carbon atoms with a bromo or chloro group in the 5 or 3,5 positions of the pyridine moiety resulted in the best intraperitoneal activity. The effect of the position of the ring substituent can be appreciated, for example, from a comparison of WR 43,900 with WR 50,480 and WR 85,565 with WR 94,533. With one exception, WR 138,412, all of the Bunte salts that were tested orally were inactive.

The 2-quinolinyloxyalkylaminoethanethiosulfuric acids (Table 30) also proved to be an active series of compounds when administered intraperitoneally. In this series a 3-carbon spacer conferred the greatest activity although it should be noted that only one compound with a 4-carbon spacer was tested. The pentyl ethers were, with one exception, inactive. The unsubstituted quinolyl analog with a propyl spacer was quite active in contrast to the corresponding pyridyl analog. Methyl substituents on the ring increased activity but there was no evidence that the presence of halogen on the ring, unlike the corresponding pyridyl series, was salutary. Attachment of the ether chain at the 4, 5 or 8 positions yielded ineffective compounds; compare WR 106,156 with WR 36,955, WR 25,930 with WR 9463. The unsubstituted 1-isoquinolyl derivative, WR 117,932, isomeric with the active quinolyl derivative, WR 106,156, was inactive. As with the pyridyl ethers, the quinolyl ethers were also ineffective when administered orally.

In contrast to the Bunte salts, the best of the thiols in the 2-pyridyl ether series showed only moderate activity when administered intraperitoneally and even less activity when

administered orally (Table 31). Although data are limited it would appear that a spacer of at least 5 carbons in the side chain is necessary before activity appears. Relatively few of the 2-quinolyloxyalkylaminoethanethiols were prepared and none with appropriate ring substituents or alkyl spacers so that comparisons cannot be made.

2-[(3-Thiazolidinylalkyl)oxy]pyridines and Quinolines (Tables 32 and 33)

Blocking the aminoethanethiol moiety of the 2-pyridyl ethers by incorporation in a thiazolidine gave a series of compounds with only moderate activity when administered intraperitoneally; they were comparable in activity in general to the corresponding thiols but less active than the Bunte salts, with ALD_{50} 's generally higher than either of these classes (Table 32). The outstanding characteristic of the class was the almost universal activity of the compounds when administered orally and the remarkably high activity of certain of the compounds. Although the oral doses of the compounds tested were larger in terms of mg/kg than were the parenteral, they were approximately comparable to the latter when related to the ALD_{50} . The series exhibited oral activity over a range of spacers from 3 to 7 ($n = 3-7$); the 5-halo-2-pyridyl ethers with spacers of 5 and 6 carbons showed the greatest oral activity. In contrast to the pyridyl series, blocking the aminoethanethiol moiety as a thiazolidine in the 2-quinolyloxyalkyl derivatives yielded a series of compounds which, for the most part was inactive, and in which the best representatives showed only moderate activity regardless of the route of administration (Table 33).

2-[(3-Thiazolidinylalkyl)thio]pyridines (Table 34)

The phenomenon of the good oral activity shown by the pyridyl ethers when the aminoethanethiol moiety was incorporated in a thiazolidine was also apparent in the corresponding thio ethers, *i.e.*, the 2-[(3-thiazolidinylalkyl)thio]pyridines. Syntheses were confined to the halopyridyl derivatives because of the concentration of activity in similarly substituted pyridyl ethers. In the series of pyridyl thio ethers the greatest activity was obtained with an alkyl spacer of 5-7 carbons ($n = 5-7$) when the compounds were administered intraperitoneally (Table 34). The most effective range of spacers appeared to be somewhat greater with oral administration ($n = 5-8$) (Table 34). It is also apparent that, in a number of cases, the oral activity of the compound surpassed the parenteral at equal fractions of the respective ALD_{50} 's. Relatively few of the corresponding quinolythio ethers were synthesized so that comparisons cannot be made. However, it is of interest that the only activity uncovered in the latter quinoline derivatives was in those compounds in which the quinoline ring was unsubstituted.

A series of 3-[(alkylthio)alkyl]thiazolidines (Table 35) were synthesized in which m and n were varied. The degree of activity of the compounds when administered intraperitoneally or orally was only moderate and variable depending upon the size of m and n . The best activity in general, was shown by those compounds in which $m + n = 9, 10$ or 11 , although there were exceptions to this conclusion when m or $n < 4$. The noteworthy feature of the series is the fact that any activity shown when administered intraperitoneally generally carried over when the compounds were administered orally. The best compounds in the series when administered orally were WR 157,311 and WR 134,783. The contribution of the sulfur interruption of the chain is impossible to ascertain since an insufficient number of the simple 3-alkylthiazolidines were synthesized and tested. Data for the compound 3-octylthiazolidine, WR 2949, are: ALD_{50} , IP, 150 mg/kg; 50 mg/kg dose IP rated +, $\pm$; ALD_{50} , PO, 700 mg/kg, 300 mg/kg dose PO rated +, +, $\pm$. For 3-decylthiazolidine, WR 2950, the data are: ALD_{50} , IP 75 mg/kg, 50 mg/kg dose IP rated +(T), +, 0; ALD_{50} , PO, 550 mg/kg, 100 mg dose rated +. The activity of these two 3-alkylthiazolidines, both intraperitoneally and orally, suggests that the introduction of sulfur in the chain makes little difference. The oral activity of WR 2949 and WR 2950 stands in contrast to the lack of oral activity of the corresponding derivatives when the sulfur of the aminoethanethiol moiety is present as the thiol itself (see below) or blocked as the thiosulfate, although the latter compounds were highly effective intraperitoneally. Oxygen analogs of the sulfur interrupted chains were not explored to any appreciable extent. The oxygen analog of the very active WR 134,783, (Table 35), viz., WR 158,494, was appreciably less active, both IP and PO, than WR 134,783.

Thus, as just discussed, the blocking of a thiol by incorporation of the aminoethanethiol moiety in a thiazolidine can, in certain series, result in active compounds when the compounds are administered intraperitoneally and the activity can carry over, and sometimes be enhanced, when the compounds are administered orally. The octyl homolog, $CH_3(CH_2)_7NHCH_2CH_2SH$, WR 230, is about twice as toxic as the corresponding 3-(n-octyl)thiazolidine, WR 2949, by intraperitoneal administration, but no more active. Orally the thiol is 3-4 times as toxic as the thiazolidine and is inactive; the thiazolidine, in contrast, has excellent activity. The same type of relationship can be seen when comparing the n-decyl-thiol and -thiazolidine analogs, WR 228 and WR 2950 respectively. Unfortunately the thiazolidines corresponding to thiols with other good N-substituents, e.g., WR 2529, WR 2753, WR 2347 and WR 1065 were not synthesized but their synthesis and testing is certainly indicated. In investigating

new compounds it would be worth the effort to synthesize and test the corresponding thiazolidine if the thiol or a derivative with a blocked thiol proved to have appreciable intraperitoneal activity, regardless of its oral activity.

Aminoalkylaminoethanethiols and Derivatives (Tables 36 and 37)

Data from the testing of N-substituted derivatives of the aminoalkylaminoethanethiols and -phosphorothioates [$R_1R_2N(CH_2)_nNHCH_2CH_2SY$, $Y = H, PO_3H_2$] are shown in Tables 36 and 37. The synthesis of such derivatives was confined mostly to the thiols ($Y = H$) and the phosphorothioates ($Y = PO_3H_2$); relatively few of the corresponding disulfides [$Y = SCH_2CH_2NH(CH_2)_nNR_1R_2$] were synthesized and none showed remarkable activity. Not nearly as many thiosulfuric acids were synthesized as were the thiols and phosphorothioates; those thiosulfuric acids that were synthesized were less toxic than the thiols but were uniformly inactive by intraperitoneal administration, even those corresponding to the very active phosphorothioate congeners. They were not tested by oral administration and have not been tabulated. Compounds in which the distal nitrogen is incorporated in a heterocycle were essentially devoid of activity, regardless of the type of sulfur blocking, and have been omitted from Tables 36 and 37. Most of the other derivatives where R_1 is an alkyl group substituted with such groups as hydroxy, polyhydroxy, amino, hetero, alkyloxy, alkylthio, cyano, carboalkoxy and aryl are included in the table despite the fact that such inclusion makes the table replete with negative data. However, the fact that the best compounds in this class were as good or better than any that emerged from the program makes the scope of the structural types investigated and the comparison of structures the more important and interesting, and justifies the plethora of negative data.

The thiols, $R_1R_2N(CH_2)_nNHCH_2CH_2SY$, ($Y = H$), (Table 36), were, as a class, less active than the phosphorothioates ($Y = PO_3H_2$), (Table 37), and had lower ALD_{50} s. Substitution of alkyl groups larger than methyl ($R_1 > CH_3$) on the distal N of the thiols abolished activity and the best activity was seen when this N was unsubstituted. Alicyclic or terpenoid groups on the distal N also abolished activity. Activity peaked when the nitrogen atoms were separated by a chain of 3 carbon atoms ($n = 3$). The number of thiols tested orally was limited but, for those tested, oral activity was consistently lower than intraperitoneal activity. The introduction of a hydroxyl group on the terminal ethyl group of the thiols WR 6364 and WR 6365, (Table 36), decreased toxicity so that activity was evident in these derivatives, WR 1751 and WR 2153, when tested at the higher tolerated doses. Based upon a limited number of examples, the introduction of hydroxyl substituents on R_1 when R_1 is larger than ethyl ($R_1 > C_2H_5$) had little or no effect with respect to activity. Branching on a

3-carbon chain separating the nitrogens, WR 156,788 and WR 157,529, resulted in the retention of appreciable activity but the introduction of a hydroxyl on this chain, WR 1783, abolished activity.

The aminoalkylaminoethylphosphorothioates, (Table 37), as a class, include the most active and most promising of the antiradiation agents synthesized. This class of compounds was more active and had higher ALD_{50} s than the corresponding class of thiols. Highest activity was obtained when the distal nitrogen is unsubstituted or has only a methyl substitution; unlike the congeneric thiols, some activity was retained with alkyl groups slightly larger than methyl. Large hydrocarbon moieties such as cycloalkyl or terpenoid substituted on the distal N abolished activity. Peak activity, as with the thiols, was seen when there is a chain of 3 carbons between the nitrogen atoms ($n = 3$) but the base of activity was broader and the peak was not nearly as well defined as in the case of the thiols. Good activity was retained when the 3-carbon connecting chain between the nitrogen atoms is branched or when, in contrast to the thiols, it is hydroxylated (WR 151,325). Replacement of the terminal amino group with a guanidino group also resulted in active, but somewhat more toxic, compounds, so that the therapeutic index seems unfavorable. Only a few of this type were made. Although the best compounds of this class showed activity when administered orally, the degree of activity was much less than when administered intraperitoneally, suggesting limited absorption.

Aminoalkylaminopropanethiols and Derivatives (Tables 38 and 39)

Derivatives of the aminoalkylaminopropanethiols, $R_1R_2NH(CH_2)_nNHCH_2CH_2CH_2SY$, were not extensively investigated. For the most part, synthetic efforts were confined to the thiols ($Y = H$) (Table 38) and the phosphorothioates ($Y = PO_3H_2$) (Table 39). The latter derivatives, unlike the simple derivatives of aminopropanethiols, showed excellent intraperitoneal activity when $n = 2$ or 3 , $R = H$ or CH_3 , and $Y = PO_3H_2$ (Table 39) and also when $n = 3$, $R = CH_3$, and $Y = H$ (Table 38). When administered orally the activity of these same compounds was less than when administered intraperitoneally, but was still quite good. Unfortunately, a direct comparison of several of the most active phosphorothioates with the corresponding thiols is not possible. It is interesting that the corresponding guanidino derivative, WR 190,222, (Table 39), was also very active when administered intraperitoneally but not when administered orally. Extension of the length of the chain connecting the nitrogens beyond 3 carbons, *i.e.*, $n > 3$, in the phosphorothioates abolished activity and the same was true for the derivatives of 2-hydroxy-3-aminopropylphosphorothioate, $R_1R_2N(CH_2)_nNHCH_2CHOHCH_2SPO_3H_2$. The latter compound when $R_1 = R_2 = H$ and $n = 3$

(WR 142,489) is quite active by intraperitoneal administration but inactive by oral administration; this is in contrast to corresponding deshydroxy phosphorothioate, WR 44,923, which retains good oral activity. The aminoalkylaminopropanephosphorothioates may deserve additional attention.

It would appear, therefore, that the activities of the most active phosphorothioates in the ethyl or propyl series were comparable, *i.e.*, in the series $\text{RNH}(\text{CH}_2)_n\text{NH}(\text{CH}_2)_m\text{SPO}_3\text{H}_2$ when $\text{R} = \text{H}$ or CH_3 and $n = 2, 3$ or $\text{CH}_2\text{CHOHCH}_2$, the activity of compounds where $m = 2$ was approximately the same as those where $m = 3$.

N,N'-bridged-aminoethanethiols and Derivatives

When two aminoethanethiol molecules were joined through their respective nitrogen atoms by a variety of bridges, the resulting compounds, with few exceptions, were inactive and are not tabulated. Thus only two compounds in a series of N,N'-polymethylene-bridged 2-aminoethanethiols, $\text{HSCH}_2\text{CH}_2\text{NH}(\text{CH}_2)_n\text{NHCH}_2\text{CH}_2\text{SH}$, $n = 2-12$ (the heptylene-bridged homolog, $n = 7$, was not synthesized) showed even moderate activity, *viz.*, those in which $n = 3$ and 4, WR 2665 and WK 2209, respectively; hydroxylation of these bridges, WR 1901 and WR 342, reduced but did not abolish activity. Compounds with other bridges such as 1,4-xylylene, butenylene, branched alkylene, polyether and hydroxyether were ineffective. Although all of the corresponding thiosulfuric acids, on a one-to-one basis were not synthesized, there was a good representation and none showed any activity, including the two that showed activity as thiols. Synthesis of the corresponding bridged phosphorothioates was confined principally to those compounds with alkylene bridges. Interestingly, the two bridges that conferred activity in the thiol series were the same ones that appeared in the active phosphorothioates, *viz.*, $n = 3$ and 4, WR 3694 and WR 4431. These phosphorothioates were, however, considerably more active than the corresponding thiols. As in the thiol series, the analog with a hydroxypropylene bridge, WR 179,212, was also active but less so than the analog with an unsubstituted bridge. The above comparisons again point to the validity of the generalization that, in a given series of highly polar, water-soluble compounds, the phosphorothioates are usually the most active and the thiosulfuric acids the least, with the thiols occupying an intermediate position; toxicities usually follow the reverse order.

N,N'-polymethylene-bridged 3-aminopropanethiol Derivatives

A series of N,N'-polymethylene-bridged 3-aminopropanethiosulfuric acids, $\text{HO}_3\text{SSCH}_2\text{CH}_2\text{CH}_2\text{NH}(\text{CH}_2)_n\text{NHCH}_2\text{CH}_2\text{CH}_2\text{SSO}_3\text{H}$, $n = 3-10$, were completely inactive. The

corresponding series of phosphorothioates, $n = 2-5$ and $7-10$, were also completely inactive. These negative data have not been tabulated. The corresponding thiols were not synthesized.

Mercaptoacetamidines and Derivatives (Tables 40-46)

The synthesis of the acetamidine derivatives was confined largely to those in which the sulfur was blocked as a thiosulfuric acid or as a disulfide. The parent compounds, *i.e.*, those with no substitution on the nitrogen atom, were very active both by intraperitoneal and oral administration regardless of the type of sulfur blocking (Table 40). Compared to the corresponding aminoethyl analogs, the amidines are more efficient but also more toxic.

The simple N-alkylamidine derivatives were synthesized only as the thiosulfuric acids (Table 41). There was a smattering of activity but this was generally of a low order. Compound WR 166,823 was the most active of this group. The *n*-nonyl and *n*-decyl derivatives, WR 2706 and WR 2608 respectively, were quite toxic. Introduction of a hydroxyl group on the short chain analogs brought about no significant improvement.

The synthesis of N-aryl-, N-arylalkyl- and N-substituted-arylalkylamidine derivatives was also, almost exclusively, confined to the thiosulfuric acids (Table 42). A number of these thiosulfuric acids showed activity with intraperitoneal administration ranging from poor to fair but none of the compounds was outstanding. Those that were tested orally were inactive. The best compound was the N-(2-naphthyl) derivative as the disulfide, WR 199,737.

A small number of N-phenoxyalkyl- and N-phenalkyloxyalkylamidine derivatives, along with some thio analogs, were synthesized, almost exclusively in the form of thiosulfuric acids (Table 43). Several of these compounds exhibited good activity when administered intraperitoneally but were definitely less active administered orally. Thus the interruption of the alkyl chain in the N-phenalkyl derivatives by oxygen or sulfur decreased toxicity compared to the compounds with uninterrupted chains of equivalent length, *e.g.*, WR 37,720 and WR 60,237, (Table 43), compared to WR 3856, (Table 42), etc.; it would be of interest to synthesize and test a few 2-naphthyloxyalkyl analogs. The pronounced increase in activity brought about by the introduction of a methyl group on the phenyl ring, WR 8312 vs WR 32,379 is also noteworthy.

Synthesis of the N-cycloalkyl- and N-cycloalkylalkylamidine derivatives was also confined mostly to the thiosulfuric acids and disulfides (Tables 44 and 45); the few thiols and phosphorothioates that were synthesized are included in Tables 44 and 45 respectively. When the compounds were administered intraperitoneally, fair to good activity was generally obtained with both the disulfides and thiosulfuric acids. When administered orally the disulfides were, as a rule, more active and more efficient. There seemed to be no discernible trend in

activity as a function of ring size or chain length. Most of the compounds had a high $ALD_{50}(PO)/ALD_{50}(IP)$ ratio.

The N-(1-adamantyl-) and N-(1-adamantylalkyl)-amidine derivatives, as disulfides (Table 45), were characterized by low intraperitoneal ALD_{50} 's and high $ALD_{50}(PO)/ALD_{50}(IP)$ ratios. Although they are, as a class, inherently active, as shown by their oral effectiveness, no intraperitoneal activity was evident when the alkyl chain was longer than 2 carbon atoms because of the necessity of testing at such low drug doses. The relatively high oral ALD_{50} 's may indicate limited absorption. In general, as a class, the compounds showed fair to good oral activity although toxicity, as evidenced by early deaths, was prevalent. The corresponding thiosulfuric acids were also marked by a high $ALD_{50}(PO)/ALD_{50}(IP)$ ratio. With the exception of the parent N-(1-adamantyl) and N-(1-adamantyl)methyl derivatives there was little or no activity when the thiosulfates were administered intraperitoneally and, with one exception, WR 201,730, no activity when they were given orally, even though some of the doses administered were quite large. Only a few of the 2-adamantyl isomers were synthesized; as disulfides they were at least as active and possibly more active than their corresponding 1-adamantyl isomers both by intraperitoneal and oral administration. The limited data also suggest that the 2-adamantyl isomers, as thiosulfuric acids, may be superior to the 1-adamantyl isomers when administered intraperitoneally; however, when delivered orally they are inactive. As with the 1-adamantyl derivatives, the 2-adamantyl derivatives also show a marked difference between the oral and intraperitoneal ALD_{50} 's. In the few compounds that were made with a sulfur-interrupted alkyl chain (Table 45), the activity of the disulfides was at least equal to the corresponding analog with a non-interrupted chain both by the oral and intraperitoneal routes of administration. A limited number of derivatives with oxygen-interrupted chains as well as sulfur-interrupted were synthesized as thiosulfuric acids. These compounds generally had higher ALD_{50} 's than the compounds with uninterrupted chains of equivalent length. Some of these had fair to good activity intraperitoneally but showed little or no activity orally, as did their counterparts with non-interrupted chains. The amidine derivatives containing N-terpenoid moieties showed fair to good activity in both the disulfide and thiosulfuric acid series when administered intraperitoneally (Tables 44 and 45). In the case of the disulfides the activity carried over to oral administration; however, with the exception of the 2-bornyl analog, WR 92,973, there was little or no activity when the Bunte salts were given orally.

Unlike the simple, unsubstituted aminoalkylthiols and thio derivatives, in which the activity is essentially abolished if the alkyl chain connecting the N and S atoms is extended beyond 2 carbon atoms, the amidines with longer chains retain appreciable activity when

the compound is administered either intraperitoneally or orally (Table 46). The higher homologs are less efficient than the lower on a mg/kg basis but the ALD_{50} 's are appreciably higher.

The synthesis of N-heterocyclic alkyl amidine derivatives was confined largely to the thiosulfuric acids; the alkyl chains joining the heterocycle to the amidine moiety varied from 1 to 3 carbons in length. In general, these compounds were disappointing and not tabulated. Included in the compounds tested were the following heterocyclic moieties: 2-furylmethyl and -ethyl; 2-tetrahydrofurylmethyl; 2-thienylmethyl and -ethyl; 2-, 3- and 4-pyridylmethyl and 2- and 4-pyridylethyl, 2-benzimidazolylethyl, 3-indolylethyl and -propyl and 2-imidazolidinone-2-yl ethyl. All of the pyridyl analogs were inactive as were the 2-furylmethyl, the 2-tetrahydrofurylmethyl, the 3-indolylpropyl and the 2-imidazolidinone-2-yl ethyl analogs. The other compounds were active at the + level only at the highest tested doses. The best compound of the group was the 3-indolylethyl analog, WR 33,762. The 2-benzimidazolylethyl analog showed comparable activity as the thiosulfuric acid, thiol or phosphorothioate.

Guanidinoalkylthiols and Derivatives

The guanidinoalkylthiol derivatives, $RNHC(=NH)N(R_1)(CH_2)_nSY$, where $Y = H, SO_3H$, or $S(CH_2)_nN(R_1)C(=NH)NHR$, showed little or no activity and, as a class, were uninteresting and not tabulated. Simple phosphorothioates were not prepared. All of the parent compounds, i.e., $R = R_1 = H$, $n = 2$ or 3 , and $Y = H, SO_3H$ or $S(CH_2)_nN(R_1)C(=NH)NHR$, with the exception of the guanidinopropyl disulfide, were active only at the highest drug dose administered. When R or R_1 was alkyl the activity was reduced or abolished. It is interesting that the parent compounds $H_2NC(=NH)NH(CH_2)_nSH$, $n = 2$ or 3 , (WR 1574 and WR 2022 respectively) which are generally regarded as the biologically active forms, respectively, of the isothiuronium compounds $H_2N(CH_2)_nSC(=NH)NH$ (AET, $n = 2$, WR 298), (APT, $n = 3$, WR 215), were much less active than the latter compounds. The thiocarbonates corresponding to the parent thiols, i.e., $R = R_1 = H$, $n = 2$ or 3 and $Y = C(=S)SH$ (WR 783 and WR 1479 respectively) were also active, but no more so than the parents.

No-nitrogen Thiols and Derivatives (Table 47)

Thiols, or derivatives, which contain no amino group in the molecule, had shown little or no activity in animals as a class and, therefore, had not been pursued in the antiradiation drug development program. In the course of the synthetic program, however, a small number of such compounds became available and some showed activity comparable to the amino-thiols (Table 47). WR 168,643, a bis-sodium sulfinate trisulfide, was outstanding, both when administered intraperitoneally or orally. Compounds that contain a thiol group or thiol

derivative that can be bioactivated but contain no amino function would seem to have great theoretical importance with respect to mode of action. Since this area has been little investigated it would be worthy of further investigation.

TABLE 1

3-(2-Mercaptoethylamino)propioamide and Derivatives.
Effect of Varying the Thiol-Blocking Group.

WR NO.	STRUCTURE	ALD ₅₀	DOSE	SURVIVAL %
		m mol/kg	m mol/kg	
2529	$\text{H}_2\text{NCOCH}_2\text{CH}_2\text{NHCH}_2\text{CH}_2\text{SH}$	6.75	6.07	100
			3.03	90
			1.52	70
			1.18	0
139245	$(\text{H}_2\text{NCOCH}_2\text{CH}_2\text{NHCH}_2\text{CH}_2\text{S})_2$	2.12	1.70	73
			0.85	13
2981	$\text{H}_2\text{NCOCH}_2\text{CH}_2\text{NHCH}_2\text{CH}_2\text{SSO}_3\text{H}$	5.26	3.50	53
			1.75	7
6458	$\text{H}_2\text{NCOCH}_2\text{CH}_2\text{NHCH}_2\text{CH}_2\text{SPO}_3\text{H}_2$	0.570	0.219	0
			0.110	

TABLE 2

2-(3-Aminopropylamino)ethanethiol and Derivatives.
Effect of Varying the Thiol-Blocking Group.

WR NO.	STRUCTURE	ALD ₅₀ m mol/kg	DOSE m mol/kg	SURVIVAL %
1065	$H_2N(CH_2)_3NHCH_2CH_2SH$	1.68	1.12 0.56	85 0
33278	$[H_2N(CH_2)_3NHCH_2CH_2S-]_2$	0.52	0.24	0
9720	$H_2N(CH_2)_3NHCH_2CH_2SSO_3H$	3.50	2.33 1.17	0 0
2721	$H_2N(CH_2)_3NHCH_2CH_2SPO_3H_2$	4.76	2.80 1.40 0.70 0.35	100 100 40 20

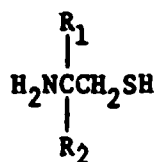
TABLE 3

n-Decylaminoethanethiol and Derivatives.
Effect of Varying the Thiol-Blocking Group.

WR NO.	STRUCTURE	ALD ₅₀ m mol/kg	DOSE m mol/kg	SURVIVAL %
228	$\text{CH}_3(\text{CH}_2)_9\text{NHCH}_2\text{CH}_2\text{SH}$	0.299	0.115 0.058	80 20
1607	$\text{CH}_3(\text{CH}_2)_9\text{NHCH}_2\text{CH}_2\text{SSO}_3\text{H}$	0.0504	0.017 0.008	100 40
2294	$\text{CH}_3(\text{CH}_2)_9\text{NHCH}_2\text{CH}_2\text{SPO}_3\text{H}_2$	0.336	0.168 0.084	67 13
159241	$\text{CH}_3(\text{CH}_2)_9\text{NHCH}_2\text{CH}_2\text{SSCH}_2\text{CH}_2\text{NH}(\text{CH}_2)_9\text{CH}_3$	0.053	0.0462 0.0231	20 0

TABLE 4

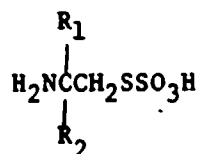
2-Aminoalkylthiols



WR NO.	R ₁	R ₂	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
347	H	H	300	150	+,+,0
186	CH ₃	H	300	125	+,0
339	CH ₃	CH ₃	350	200	+(T),0
43	C ₂ H ₅	H	>300	200	0(T),+,0
621	CH ₃ CH ₂ CH ₂	H	140	100	+,+
2720	CH ₃ CH ₂ CH ₂	CH ₃	150	100	0
651	(CH ₃) ₂ CH	H	160	150	+,0
3349	-(CH ₂) ₄ -		250	75	0
2648	-(CH ₂) ₅ -		150	100	0
781	CH ₃ (CH ₂) ₅	H	180	100	0

TABLE 5

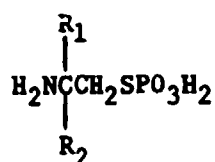
2-Aminoalkylthiosulfuric Acids



WR NO.	<u>R₁</u>	<u>R₂</u>	<u>ALD₅₀</u> <u>mg/kg</u>	<u>Drug Dose</u> <u>mg/kg</u>	<u>Rating</u> <u>Rating</u>
361	H	H	625	350	+, ±
1484	CH ₃	H	450	350	+
1488	CH ₃	CH ₃	800	600	+
182619	C ₂ H ₅	H		600	0(T), +, 0
2108	C ₂ H ₅	CH ₃	700	300	0
1903	CH ₃ (CH ₂) ₂ (DL)	H	325	125	0
1904	CH ₃ (CH ₂) ₂ (L)	H	250	125	0
2085	CH ₃ (CH ₂) ₂ (D)	H	250	150	0
2176	CH ₃ (CH ₂) ₂	CH ₃	300	150	0
4619	(CH ₃) ₂ CH	H	500	150	±, 0
2293	(CH ₃) ₂ CH	CH ₃	>400	150	0
1663	CH ₃ (CH ₂) ₃	H	175	75	0
2177	CH ₃ (CH ₂) ₃	CH ₃	300	200	0(T), 0
1661	(CH ₃) ₂ CHCH ₂	H	200	150	0
2178	(CH ₃) ₂ CHCH ₂	CH ₃	240	150	0(T), 0
1662	CH ₃ CH ₂ CH(CH ₃)	H	250	150	0(T), 0
2649	-(CH ₂) ₄ -		800	300	+, ±
2579	-(CH ₂) ₅ -		300	200	±, 0
2381	CH ₃ (CH ₂) ₅	CH ₃	180	100	0
1112	C ₆ H ₅ CH ₂	H	250	100	0

TABLE 6

2-Aminoalkylphosphorothioates



WR NO.	<u>R₁</u>	<u>R₂</u>	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
638	H	H	525	400	+,+, <u>±</u> ,0
4468	CH ₃	H	700	400	+,0
1490	CH ₃	CH ₃	750	600	+
4470	C ₂ H ₅	H	320	180	0
1961	CH ₃ CH ₂ CH ₂	H	375	250	0(T), <u>±</u>
5137	(CH ₃) ₂ CH	H	600	300	+, <u>±</u>
2378	(CH ₃) ₂ CHCH ₂	H	250	100	0
3311	-(CH ₂) ₅ -		300	200	<u>±</u>
2819	CH ₃ CH ₂ CH ₂	CH ₃	>400	400	0(T),0

TABLE 7
2-Mercaptoalkylamines

$$\begin{array}{c}
 R_1 \\
 | \\
 H_2NCH_2CSH \\
 | \\
 R_2
 \end{array}$$

WR NO.	<u>R₁</u>	<u>R₂</u>	<u>ALD₅₀</u> <u>mg/kg</u>	<u>Drug Dose</u> <u>mg/kg</u>	<u>Rating</u>
347	H	H	300	150	+, <u>±</u> ,0
166	CH ₃ (DL)	H	425	300	+(T), <u>±</u> ,0
2452	CH ₃ (D)	H	400	200	<u>±</u> ,0
2470	CH ₃ (L)	H	600	200	<u>±</u> ,0
1553	CH ₃	CH ₃	300	100	C(T),0
780	C ₂ H ₅	H	400	200	0
1726	C ₂ H ₅	CH ₃	225	100	0
1554	CH ₃ CH ₂ CH ₂	H	174	75	0
1568	CH ₃ (CH ₂) ₃	H	120	50	0
1569	CH ₃ (CH ₂) ₄	H	88	50	0
847	CH ₃ (CH ₂) ₅	H	75	50	0
1696	CH ₃ (CH ₂) ₆	H	>120	60	0
2127	-(CH ₂) ₃ -		225	100	0
2086	-(CH ₂) ₄ -		138	75	0
1987	-(CH ₂) ₅ -		70	30	0
2088	-(CH ₂) ₆ -		100	40	0
2123	3-cyclohexenyl	H	38	25	0
633	C ₆ H ₅	H	125	75	0(T),0

TABLE 8

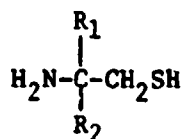
2-Thiosulfatoalkylamines



<u>WR NO.</u>	<u>R</u>	<u>ALD₅₀ mg/kg</u>	<u>Drug Dose mg/kg</u>	<u>Rating</u>
361	H	625	350	+,+
2516	CH ₃	>800	800	0(T),0
1036	C ₂ H ₅	500	350	+,0
1090	CH ₃ CH ₂ CH ₂	188	150	0
1081	CH ₃ (CH ₂) ₃	150	100	0
1144	CH ₃ (CH ₂) ₄	150	125	0
1250	CH ₃ (CH ₂) ₇	300	100	0
1734	C ₆ H ₁₁	150	100	0
769	C ₆ H ₅	---	125	+,0
1446	C ₆ H ₅ CH ₂	88	50	0

TABLE 9

2-Aminoethanethiols. Effect of Functionalized Substituents.



WR No.	<u>R₁</u>	<u>R₂</u>	<u>ALD₅₀</u> <u>mg/kg</u>	<u>Drug Dose</u> <u>mg/kg</u>	<u>Rating</u>
2082	CH ₂ SH	H	13	8	0
2694	CH ₂ SE	COOH	180	100	+, <u>+</u>
985	CH ₂ COOH	H	750	200	0
2389	CH ₂ OH	CH ₂ OH	4000	1000	+,+,0
1996	CH ₂ CH ₂ OH	H	800	500	+,0
4116	CH ₂ SH	CH ₂ OH	30	5	0
1621	CH ₂ SH	CH ₃	15	7.5	0
2704	CH ₂ CH ₂ SH	H	70	40	0
1076	COOC ₂ H ₅	H	1780	593	0
1265	CH ₂ SE	C ₂ H ₅	18	10	0
2994	CH ₂ OH	C ₂ H ₅	>800	750	0(T),0
193702	H ₂ N(CH ₂) ₄	H	88	50	<u>+</u> ,+,+, <u>+</u>
1986 ^a	HOCH ₂	H	1200	800	0
2917 ^a	HOCH ₂	HOCH ₂	1800	1200	0
2717 ^a	HO ₃ SSCH ₂	H	>500	400	0(T)

^a The corresponding thiosulfuric acid.

TABLE 10

2-Aminoethylphosphorothioates. Effect of Functionalized Substituents.



WR No.	R	INTRAPERITONEAL DATA				ORAL DATA		
		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	
114, 391	H ₂ NCH ₂	>9000	400	+, +, 0				
176, 241 ^a	HOCH ₂	>1250	1000	+(T), +, +, +	>1500	1000	0, +	
194, 423	H ₂ NCH ₂ CH ₂ (L)	>1250	1000	+(T), +, +, +, +	1500	1000	0	
179, 209	H ₂ N(CH ₂) ₃ (DL)	>1000	1000	+, +, +, +, 0	1500	1000	0	
187, 094	H ₂ N(CH ₂) ₃ (L)	>800	400	+, +, +, +, 0	>1000	1000	0	
176, 542	H ₂ N(CH ₂) ₄ (DL)	900	250	+(T), +, +, +, +	900	500	+, +, +, 0	
187, 093	H ₂ N(CH ₂) ₄ (L+)	275	250	+(T), +, +, +, +	750	500	+, +, +	
183, 977	H ₂ N(CH ₂) ₅	500	200	+, +, +, 0	>1000	400	+ ₂ , C	

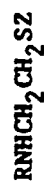
a. $\text{H}_2\text{NC}(\text{CH}_2\text{OH})_2\text{CH}_2\text{SPO}_3\text{H}_2$

TABLE 11
Alkylaminoethanethiols and -thiosulfates

R	RNHCH ₂ CH ₂ SZ							
	Z = H				Z = SO ₃ H			
	WR NO.	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	WR NO.	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
H	347	300	150	+, <u>±</u> ,0	361	625	350	+, <u>±</u>
CH ₃	2113	300	200	+,0	258	350	300	+, <u>±</u>
C ₂ H ₅	889	350	150	0	1095	525	300	+
CH ₃ (CH ₂) ₂	1426	125	75	0	1033	350	225	<u>±</u>
CH ₃ (CH ₂) ₃	224	350	60	0	2244	300	200	0
CH ₃ (CH ₂) ₄	2316	75	30	0	2341	200	50	0
CH ₃ (CH ₂) ₅	234	50	10	0	2137	100	75	0
CH ₃ (CH ₂) ₆	1548	75	30	0	2078	125	75	0
CH ₃ (CH ₂) ₇	230	75	40	+,0	1618	125	30	+(T),+
CH ₃ (CH ₂) ₈	1547	125	25	+	1818	40	5	+, <u>±</u>
CH ₃ (CH ₂) ₉	228	43	25	+, <u>±</u>	1607	13	5	+, <u>±</u>
CH ₃ (CH ₂) ₁₀	1549	45	30	+(T)	2111	8	5	0
CH ₃ (CH ₂) ₁₁	2297	25	15	0	2080	10	5	0
CH ₃ (CH ₂) ₁₂	2059	35	25	0	2236	10	5	<u>±</u> ,0
CH ₃ (CH ₂) ₁₃	2334	40	25	0(T),0	2281	10	5	<u>±</u>
CH ₃ (CH ₂) ₁₄	2084	60	25	0	2345	40	30	0
CH ₃ (CH ₂) ₁₅	1710	150	120	0	2412	150	40	0
CH ₃ (CH ₂) ₁₆	2047	100	50	0(T)	2356	200	100	0
CH ₃ (CH ₂) ₁₇	1711	400	200	0	2362	400	250	0

TABLE 12

Branched- alkylaminoethanethiols and -thiosulfuric Acids



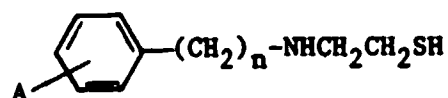
R	Z = SO ₃ H				Z = H			
	WR No.	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	WR No.	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
(CH ₃) ₂ CH	259	270	250	0	691	113	100	0
(CH ₃) ₃ C	874	250	200	0	1512	150	100	0
(CH ₃) ₂ CHCH ₂					229	150	100	0
CH ₃ CH ₂ CHCH ₃					223	88	50	0
(CH ₃) ₃ CCH ₂	8165	475	200	0				
(CH ₃) ₂ CHCH ₂ CHCH ₃	2856	175	50	0	2637	100	60	0
CH ₃ (CH ₂) ₃ CHCH ₃					2131	63	25	0
CH ₃ (CH ₂) ₄ CHCH ₃								
CH ₃ (CH ₂) ₃ CHCH ₂ CH ₃	2231	175	70	0				
(CH ₃ CH ₂ CH ₂) ₂ CH					2154	85	25	0
(CH ₃) ₂ CHCH ₂ C(CH ₃) ₂ CH ₂					2247	60	25	0
(CH ₃) ₂ CHCH ₂ CH ₂ CHCH ₃					2572	75	25	0
CH ₃ (CH ₂) ₅ CHCH ₃	1606	138	75	+, ±	1522	38	20	0
CH ₃ (CH ₂) ₃ CH(C ₂ H ₅)CH ₂	2079	180	120	+(T), ±	1681	60	50	0(T, 0(T)
					149	150	100	0

TABLE 12
(Continued)

	WR No.	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	WR No.	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
$\text{CH}_3(\text{CH}_2)_4\text{CHCH}_2\text{CH}_3$	2246	125	75	$\pm, 0$				
$\text{CH}_3(\text{CH}_2)_3\text{CHCH}_2\text{CH}_2\text{CH}_3$	2402	140	75	$\pm, \pm$				
$(\text{C}_2\text{H}_5)_3\text{CCH}_2$	2690	120	50	$\pm, 0$				
$(\text{CH}_3)_3\text{CCH}_2\text{C}(\text{CH}_3)_2$	159570	90	50	$\pm, 0$	1507	50	15	0
$(\text{CH}_3)_2\text{CH}(\text{CH}_2)_5\text{CH}_2$	2077	140	40	$\pm, 0$				
$\text{CH}_3(\text{CH}_2)_4\text{CHCH}_2\text{CH}_2\text{CH}_3$	2386	200	75	$\pm, \pm$				
$\text{CH}_3(\text{CH}_2)_5\text{CHCH}_2\text{CH}_3$	2926	125	50	$\pm, 0$				
$(\text{CH}_3)_3\text{CCH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2$	9528	100	20	0				
$\text{CH}_3(\text{CH}_2)_5\text{C}(\text{CH}_3)_2\text{CH}_2$					1521	>125	125	0
$\text{CH}_3(\text{CH}_2)_7\text{CHCH}_3$	2245	25	15	$\pm, \pm, 0$				
$\text{CH}_3(\text{CH}_2)_6\text{CHCH}_3$	2709	50	45	$\pm(\text{T}), \pm, 0$				
$\text{CH}_3(\text{CH}_2)_6\text{CHCH}_2\text{CH}_3$	2390	100	25	$\pm, \pm, 0$				
$(\text{CH}_3)_2\text{CH}(\text{CH}_2)_3\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_3$	3358	125	30	$\pm, \pm, \pm, 0$				
$\text{CH}_3(\text{CH}_2)_8\text{CHCH}_3$	2411	20	10	$\pm, 0$				

TABLE 13

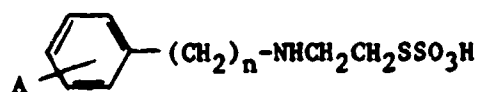
Phenalkylaminoethanethiols



WR No.	A	n	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
1891	H	--	>500	300	0
2423	4-F	--	600	200	0
4118	4-OC ₂ H ₅	--	750	250	0
217	H	CH ₂	100	90	+(T), 0
1789	4-CH ₂ OH	CH ₂	250	100	0
1245	4-OCH ₃	CH ₂	110	90	0(T)
3233	H	(CH ₂) ₂	80	40	+, 0
2302	3,4-(OCH ₃) ₂	(CH ₂) ₂	90	75	0
2298	H	(CH ₂) ₃	75	25	0
2308	H	CH ₂ CH(CH ₃)	90	50	0
2299	H	CH(C ₂ H ₅)	80	25	0
2397	H	(CH ₂) ₄	75	25	0
36956	4-OCH ₃	(CH ₂) ₄	70	40	0

TABLE 14

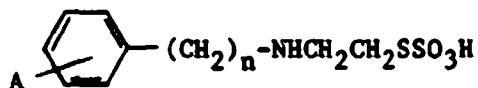
Phenalkylaminoethanethiosulfuric Acids



WR No.	n	A	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
3552	--	H	>800	400	0
2230	CH ₂	H	250	150	0(T), 0
4701	CH ₂	4-OCH ₃	180	100	0
2456	(CH ₂) ₂	H	150	50	0
2229	(CH ₂) ₃	H	125	50	+, 0
3300	(CH ₂) ₃	2-OCH ₃	200	75	±(T), 0
2144	(CH ₂) ₃	3-OCH ₃	300	50	0
4547	(CH ₂) ₃	4-OCH ₃	200	75	±, 0
2754	(CH ₂) ₄	H	300	120	+, +, 0
71462	(CH ₂) ₄	4-Br	43	32	0
3086	(CH ₂) ₄	4-CH ₃	15	5	0
3337	(CH ₂) ₄	2,5-(CH ₃) ₂	20	10	+, 0
3340	(CH ₂) ₄	2,4-(CH ₃) ₂	38	15	+, 0
3342	(CH ₂) ₄	4-C ₂ H ₅	15	5	+, 0
4102	(CH ₂) ₄	2-OH	300	100	0
3050	(CH ₂) ₄	4-OCH ₃	175	100	+, +, +, ±
4109	(CH ₂) ₄	3-OCH ₃	150	75	+, +, 0
3338	(CH ₂) ₄	3,4-(OCH ₃) ₂	350	150	±, 0
4103	(CH ₂) ₄	4-OC ₂ H ₅	22	15	±(T), ±
3611	(CH ₂) ₄	4-C ₆ H ₁₁	15	15	0(T), ±
6138	CH(C ₂ H ₅)CH ₂	3-OCH ₃	100	40	±, 0

TABLE 14

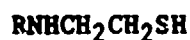
Phenalkylaminoethanethiosulfuric Acids



WR No.	n	A	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
3552	--	H	>800	400	0
2230	CH ₂	H	250	150	0(T), 0
4701	CH ₂	4-OCH ₃	180	100	0
2456	(CH ₂) ₂	H	150	50	0
2229	(CH ₂) ₃	H	125	50	+, 0
3300	(CH ₂) ₃	2-OCH ₃	200	75	±(T), 0
2144	(CH ₂) ₃	3-OCH ₃	300	50	0
4547	(CH ₂) ₃	4-OCH ₃	200	75	±, 0
2754	(CH ₂) ₄	H	300	120	+, +, 0
71462	(CH ₂) ₄	4-Br	43	32	0
3086	(CH ₂) ₄	4-CH ₃	15	5	0
3337	(CH ₂) ₄	2,5-(CH ₃) ₂	20	10	+, 0
3340	(CH ₂) ₄	2,4-(CH ₃) ₂	38	15	+, 0
3342	(CH ₂) ₄	4-C ₂ H ₅	15	5	+, 0
4102	(CH ₂) ₄	2-OH	300	100	0
3050	(CH ₂) ₄	4-OCH ₃	175	100	+, +, +, ±
4109	(CH ₂) ₄	3-OCH ₃	150	75	+, +, 0
3338	(CH ₂) ₄	3,4-(OCH ₃) ₂	350	150	±, 0
4103	(CH ₂) ₄	4-OC ₂ H ₅	22	15	±(T), ±
3611	(CH ₂) ₄	4-C ₆ H ₁₁	15	15	0(T), ±
6138	CH(C ₂ H ₅)CH ₂	3-OCH ₃	100	40	±, 0

TABLE 15

Hydroxyalkylaminoethanethiols



<u>WR NO.</u>	<u>R</u>	<u>ALD₅₀ mg/kg</u>	<u>Drug Dose mg/kg</u>	<u>Rating</u>
698	HOCH_2CH_2	750	400	+,0
1119	$\text{HOCH}_2\text{CH}_2\text{CH}_2$	750	500	+,0
727	$\text{CH}_3\text{CHOHCH}_2$	475	300	+,±
2112	L - $\text{HOCH}_2\overset{ }{\text{CH}}\text{CH}_3$	450	300	±,0
2753	$(\text{HOCH}_2)_2\text{CH}$	1200	600	+,+,0
1120	$\text{HOCH}_2\text{CHOHCH}_2$	1300	1000	+,0
1191	$\text{HOCH}_2(\text{CH}_2)_3$	281	250	0
668	$\text{CH}_3\text{CH}_2\text{CHOHCH}_2$	275	200	0
699	$\text{CH}_3\text{CHOH}\overset{ }{\text{CH}}\text{CH}_3$	88	50	0
843	$\text{HOC}(\text{CH}_3)_2\text{CH}_2$	325	150	0
1104	$\text{HOCH}_2\overset{ }{\text{CH}}\text{CH}_2\text{CH}_3$	238	200	0
1780	$\text{HOCH}_2\overset{ }{\text{C}}(\text{CH}_3)_2$	188	125	0
1788	$(\text{HOCH}_2)_2\overset{ }{\text{C}}\text{CH}_3$	700	600	0
2846	$\text{HOCH}_2(\text{CHOH})_2\text{CH}_2$	1700	1500	+(T),±
2347	$\text{HOCH}_2\text{CHOH}\overset{ }{\text{CH}}\text{CH}_2\text{OH}$	2000	1200	+,+,±,0
4123	$(\text{HOCH}_2)_2\text{C}(\text{OH})\text{CH}_2$	1650	1250	+(T),±,0
1616	$(\text{HOCH}_2)_3\text{C}$	1300	800	+(T),±,0
2469	$\text{HOCH}_2(\text{CH}_2)_4$	1200	200	+,0
2816	$\text{CH}_3\text{CH}(\text{CH}_3)\overset{ }{\text{CH}}\text{CH}_2\text{OH}$	200	90	0
2863	$\text{CH}_3(\text{CH}_2)_2\overset{ }{\text{CH}}\text{CH}_2\text{OH}$	140	100	0(T),0
2664	$\text{HOCH}_2(\text{CH}_2)_2\text{CHOHCH}_2$	800	600	+,+,0

TABLE 15
(Continued)

WR No.	R	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
2003	$\text{CH}_3\text{CH}_2\text{C}(\text{CH}_2\text{OH})_2$	625	375	0
3297	$(\text{CH}_3)_2\text{C}(\text{OH})\text{CH}_2\text{OHCH}_2$	650	200	0(T),0
4611	$\text{CH}_3(\text{CH}_2)_2\text{CHOHCHOHCH}_2$	320	150	+,0
1103	$\text{CH}_3(\text{CH}_2)_2\text{C}(\text{CH}_3)(\text{OH})\text{CH}_2$	175	125	0
2854	$\text{CH}_3(\text{CH}_2)_3\text{CHCH}_2\text{OH}$	150	50	0
2465	$\text{CH}_3(\text{CH}_2)_2\text{CHOHC}(\text{CH}_3)_2$	100	50	0
1190	$\text{CH}_3(\text{CH}_2)_5\text{CHOHCH}_2$	83	50	0
1781	$(\text{CH}_3)_2\text{C}(\text{OH})(\text{CH}_2)_3\text{CHCH}_3$	175	150	0
2855	$\text{CH}_3(\text{CH}_2)_5\text{CHCH}_2\text{OH}$	75	25	0
3999	$\text{CH}_3(\text{CH}_2)_3\text{C}(\text{C}_2\text{H}_5)(\text{OH})\text{CH}_2$	125	25	0
4703 ^a	$\text{CH}_3(\text{CH}_2)_4(\text{CHOH})_2\text{CH}_2$	200	20	0
5025 ^b	$\text{CH}_3(\text{CH}_2)_4(\text{CHOH})_2\text{CH}_2$	200	20	0
1895	$\text{CH}_3(\text{CH}_2)_7\text{CHOHCH}_2$	88	50	0
29005	$\text{HOCH}_2\text{CHOH}(\text{CH}_2)_9$	160	100	±,0
1898	$\text{CH}_3(\text{CH}_2)_9\text{CHOHCH}_2$	88	50	0

^a Racemate 1

^b Racemate 2

TABLE 16

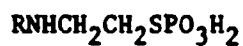
Hydroxyalkylaminoethanesulfuric Acids



<u>WR NO.</u>	<u>R</u>	<u>ALD₅₀ mg/kg</u>	<u>Drug Dose mg/kg</u>	<u>Rating</u>
3124	HOCH ₂ CH ₂	1200	800	$\pm$, 0
3095	HOCH ₂ CH ₂ CH ₂	700	800	0(T), 0
2997	CH ₃ CHOHCH ₂	600	400	0
2986	HOCH ₂ CHOHCH ₂	1750	1000	+, 0
3569	(HOCH ₂) ₂ CH	1750	1250	+, $\pm$, 0
2905	HOCH ₂ CHOHCH ₂ CH ₂ OH	1500	1000	$\pm$ (T), 0
3273	HOCH ₂ CHOHCHOHCH ₂	1800	1600	$\pm$ (T), 0
3093	(CH ₃) ₂ C(OH)CHOHCH ₂	1400	1000	$\pm$ (T), 0
2970	HOCH ₂ (CH ₂) ₆	550	300	0
2971	HOCH ₂ (CH ₂) ₇	625	200	+, 0
2865	CH ₃ (CH ₂) ₅ CHCH ₂ OH	140	80	$\pm$, 0
2908	HOCH ₂ (CH ₂) ₈	350	200	$\pm$, 0
2907	HOCH ₂ (CH ₂) ₉	> 200	100	0
2909	CH ₃ (CH ₂) ₇ CHCH ₂ OH	25	5	0
3024	HOCH ₂ (CH ₂) ₈ CHOHCH ₂	400	250	0
27748	HOCH ₂ CHOH(CH ₂) ₉	400	200	0

TABLE 17

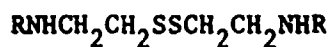
Hydroxyalkylaminoethylphosphorothioates



<u>WR NO.</u>	<u>R</u>	<u>ALD₅₀ mg/kg</u>	<u>Drug Dose mg/kg</u>	<u>Rating</u>
8186	HOCH_2CH_2	950	1200	+,+,+,0
8192	$\text{CH}_3\text{CHOHCH}_2$	1250	700	+,+,0
8187	$\text{HOCH}_2\text{CHOHCH}_2$	2000	250	0
27736	$\text{CH}_3\text{CH}_2\text{CH}_2(\text{CHOH})_2\text{CH}_2$	450	150	+,0
27077	$(\text{CH}_3)_2\text{CH}(\text{CHOH})_2\text{CH}_2$	275	100	+,0
42597	$(\text{CH}_3\text{CH}_2)_2\text{CHCHOHCH}_2$	240	180	+(T),+,0
25077	$\text{CH}_3(\text{CH}_2)_4(\text{CHOH})_2\text{CH}_2$	300	100	±,0
36978	$(\text{CH}_3)_3\text{CCH}_2\text{CH}(\text{CH}_3)\text{CHOHCH}_2$	125	80	+,+,0
52114	$\text{CH}_3(\text{CH}_2)_4\text{CHOHCH}_2\text{CHOHCH}_2$	1800	1000	0

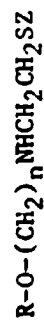
TABLE 18

Hydroxyalkylaminoethyldisulfides



WR NO.	R	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
3123	HOCH ₂ CH ₂	800	400	+,0
3097	HOCH ₂ CH ₂ CH ₂	500	315	<u>+</u> ,0
29563	HOCH ₂ CH(OH)CH ₂	1250	800	S,S
3568	(HOCH ₂) ₂ CH	1250	800	+(T),+
39748	HOCH ₂ (CH ₂) ₄	600	400	0
36951	HOCH ₂ (CH ₂) ₅	220	100	0
4853	CH ₃ (CH ₂) ₄ CH(OH)CH(OH)CH ₂ (rac. 1)	75	25	0
5027	CH ₃ (CH ₂) ₄ CH(OH)CH(OH)CH ₂ (rac. 2)	75	25	0
30462	HOCH ₂ CH(OH)(CH ₂) ₉	175	80	0
3331	CH ₃ (CH ₂) ₇ (CH(OH)) ₂ (CH ₂) ₈	133	50	0
3333	CH ₃ (CH ₂) ₅ CH(OH)(CH ₂) ₁₁	133	80	0(T),0

TABLE 19
Alkoxyalkylaminoethanethiols and -thiosulfuric Acids



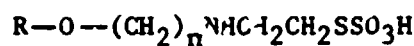
R	n	Z = H				Z = SSO_3H			
		WR NO.	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	WR NO.	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
CH ₃	2	880	225	200	0(T), 0				
C ₂ H ₅	2	3356	175	100	0				
CH ₃ (CH ₂) ₃	2	3241	74	32	0				
C ₂ H ₅ OCH ₂ CH ₂	2	9089	200	60	0				
CH ₃ (OCH ₂ CH ₂) ₂	2	27738	300	200	0				
HOCH ₂ CH ₂	2	3844	800	600	+, 0	3604	900	800	+, ±
HOCH ₂ CHOHCH ₂	2	3345	1625	1000	+, ±, 0	3607	2000	1500	+, 0
CH ₃ (CH ₂) ₃ OCH ₂ CH ₂	2	3272	100	40	0				
CH ₂ = CH	2					983	63	35	0
(CH ₃) ₂ CH	3	878	150	50	0				
CH ₃ CH ₂	3	2570	150	75	0				
H(OCH ₂ CH ₂) ₂	3	2659	500	400	0				
CH ₃ (CH ₂) ₁₁	3	2046		50	0(T), 0				
CH ₃ (CH ₂) ₆ CH(CH ₂) ₃ CH ₃	3	1754		30	0				
CH ₃ (CH ₂) ₃ OCH ₂ CH ₂	3	2575	100	50	0				

TABLE 19
(continued)

R	n	Z = H				Z = SS03H			
		WR NO.	ALD50 mg/kg	Drug Dose mg/kg	Rating	WR NO.	ALD50 mg/kg	Drug Dose mg/kg	Rating
CH ₃	4					2969	375	250	0
CH ₃ (CH ₂) ₅	5					159244		20	+ , + ₋
CH ₃	8					3070	150	75	+ , 0
CH ₃	9					2591	80	60	+ , + ₋

TABLE 20

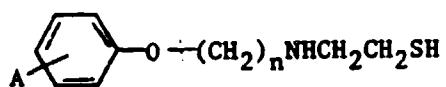
Cycloalkyloxyaminoethanethiosulfuric Acids



WR NO.	R	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
3069	(CH ₂) ₅ CH	3	150	50	0	---	---	---
4111	(CH ₂) ₄ CH	4	150	75	0	---	---	---
2972	(CH ₂) ₅ CH	4	150	75	±(T), 0	1500	750	0
4444	(CH ₂) ₆ CH	4	150	75	+(T), 0	---	---	---
4446	(CH ₂) ₇ CH	4	250	100	+(T), +, ±, 0	---	---	---
4541	(CH ₂) ₄ CH	5	150	100	±, 0	1300	600	0
2973	(CH ₂) ₅ CH	5	150	75	+(T), +, 0	>800	600	±
4538	2-CH ₃ C ₆ H ₁₀	5	75	30	±(T), +(T), 0	1100	500	0
4781	1-CH ₃ C ₆ H ₁₀	5	150	25	+, ±	1000	800	0
4540	4-CH ₃ C ₆ H ₁₀	5	18	12	±, 0	1300	600	0
138415	2-(CH ₃) ₂ CH-5-CH ₃ -C ₆ H ₉	5	60	30	+, +, ±, 0	>900	600	0
4542	(CH ₂) ₆ CH	5	35	25	+, 0	---	---	---
4545	(CH ₂) ₄ CH	6	200	50	+(T), ±	1800	1000	±
2900	(CH ₂) ₅ CH	6	150	20	±, 0	---	---	---
4544	(CH ₂) ₅ CH	8	15	10	+(T), 0	---	---	---
3610	(CH ₂) ₅ CHCH ₂ CH ₂	5	38	15	+, 0	---	---	---
25331	(CH ₂) ₅ CHCH(C ₂ H ₅)	4	96	60	+, ±, 0	>600	600	0
3567	(CH ₂) ₅ CHCH ₂	5	18	12	±, ±	---	---	---
33716	(CH ₂) ₇ CH	5	180	50	+, ±	---	---	---

TABLE 21

Phenoxyalkylaminoethanethiols

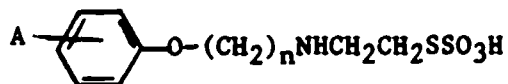


WR NO.	A	n	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
2628	H	2	100	50	$\pm, 0$
3354 ^a	H	2	90	50	0
3293	4-(CH ₃) ₃ C	2	150	100	$\pm, 0$
3307	4-Cl	2	125	75	0
3583	H	3	88	50	$\pm, 0$
6369 ^a	H	3	90	50	0
2654	2-C ₂ H ₅ O	3	90	50	0
33717	4-CH ₃	4	75	40	$+, \pm$
36160	2,5-(CH ₃) ₂	4	70	40	0
31893	2,6-(CH ₃) ₂	4	75	50	$+, \pm$
38493	2,3,6-(CH ₃) ₃	4	130	100	$\pm(T)$
36960	2-(CH ₃) ₂ CH	4	90	50	0
33897	2-CH ₃	5	100	50	$+, \pm$
33711	2-CH ₃	6	150	40	0

a. The phenylthio analog

TABLE 22

Phenoxyalkylaminoethanesulfuric Acids



WR NO.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
2146	H	2	175	100	0	—	—	—
4381 ^a	H	2	200	50	0	—	—	—
3071	3-Cl	2	150	100	$\pm, 0$	—	—	—
3240	2-C ₂ H ₅ O	2	150	100	0	—	—	—
4543 ^b	H	2	700	25	0	—	—	—
3237	H	3	150	50	0	—	—	—
5146 ^a	H	3	175	75	$\pm, 0$	—	—	—
3301	3-CH ₃	3	125	75	0	—	—	—
5979	2-CH ₃	3	150	75	0	—	—	—
3305	H	4	>250	200	0(T), 0(T)	—	—	—
3431 ^a	H	4	75	50	0	—	—	—
3087	2-CH ₃	4	150	50	+(T), +, $\pm, 0$	—	—	—
2941	3-CH ₃	4	175	50	+, 0	1050	600	0
3121	4-CH ₃	4	35	25	+, 0	1400	1000	+, 0
3565	4-C ₂ H ₅	4	40	5	0	—	—	—
33712	2-(CH ₃) ₂ CH	4	320	250	0(T), $\pm$ (T)	—	—	—
4537	4-C ₆ H ₁₁	4	50	10	0	—	—	—
3830	4-CH ₃ O	4	200	90	+(T), +, 0	>2000	1000	0
3828	4-C ₂ H ₅ O	4	95	50	+(T), +	> 100	12.5	$\pm$ (T), 0

TABLE 22
(Continued)

WR No.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
5981	4-Br	4	>150	50	0(T), 0(T)	—	—	—
4106	4-Cl	4	175	75	+(T), +	—	—	—
3819	3-Cl	4	150	100	+, +	>1250	1000	+
4792	2-Cl	4	150	50	+, +	>3200	1000	0
111489	3-(C ₂ H ₅) ₂ N	4	175	50	+, +, 0	> 900	600	0
4447	4-NO ₂	4	150	50	+, +	>2400	2000	0
3335	3-CF ₃	4	45	30	+	>1200	1200	0
4769	2,3-(CH ₃) ₂	4	22	15	+(T), +, 0	—	—	—
3336	2,4-(CH ₃) ₂	4	20	10	+, +	>1000	1000	0(T)
4805	2,5-(CH ₃) ₂	4	40	30	+, +	>2000	1500	0
4788	2,6-(CH ₃) ₂	4	250	100	+, +, +, +	>1500	1400	0
3343	3,4-(CH ₃) ₂	4	45	30	+, +	>1200	1000	0
124940	3-CH ₃ -4-(CH ₃) ₂ N	4	150	50	+, 0	—	—	—
75234	3-(CH ₃) ₂ N-4-CH ₃	4	180	100	+(T), +, +	> 900	600	0
6137	3-CH ₃ -4-CH ₃ S	4	187	50	+, +, 0	—	—	—
150640	3-NH ₂ -4-CH ₃	4	150	100	0	> 300	300	0
3122	2,4-Cl ₂	4	125	25	+, +	>2000	2000	0(T), 0
43899	2,4-[(CH ₃) ₂ CH] ₂	4	75	30	0	—	—	—
3832	2-CH ₃ O-4-C ₂ H ₅	4	125	75	+(T), +	>2400	800	+(T)
36958	2,3,6-(CH ₃) ₃	4	>100	50	0	—	—	—
39750	2-Cl-4-Br	4	75	50	0	—	—	—
40640	2-(CH ₃) ₃ C	4	38	5	0	—	—	—
3822	H	5	> 50	50	+(T), +, +, 0	>2000	1000	0

TABLE 22
(Continued)

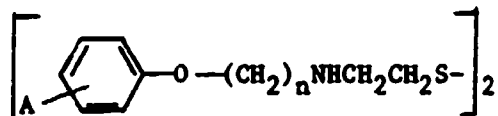
WR NO.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
3826 ^a	H	5	300	50	<u>+</u>	—	—	—
4546	2-CH ₃	5	200	70	+,+,+, <u>+</u>	>3200	200	0
136181	3-(CH ₃) ₂ N-4-CH ₃	5	135	90	<u>+</u> (T),+, <u>+</u> ,0	—	—	—
3821	H	6	500	50	0	—	—	—
4777	2-CH ₃	6	150	50	+,+, <u>+</u> ,0	>1500	1400	0

a. The phenylthio analog

b. 2-Naphthyloxyethylaminoethanesulfuric acid

TABLE 23

Phenoxyalkylaminoethyldisulfides

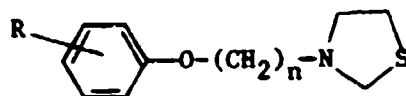


<u>WR NO.</u>	<u>A</u>	<u>n</u>	<u>ALD₅₀ mg/kg</u>	<u>Drug Dose mg/kg</u>	<u>Rating</u>
6368	H	3	120	50	0
5141 ^a	H	3	150	50	0
33895	4-CH ₃	4	430	320	0(T), <u>+</u> (T)
36159	2,5-(CH ₃) ₃	4	45	15	0
33714	2,6-(CH ₃) ₃	4	560	320	0(T), 0
40644	2,3,6-(CH ₃) ₃	4	56	30	+, 0
43893	2-(CH ₃) ₂ CH	4	100	56	+, 0
40643	4-CH ₃ O	4	430	320	+, +
33896	2-CH ₃	6	74	56	0(T), +

a. The phenylthio analog

TABLE 24

3-(Phenoxyalkyl)thiazolidines



WR NO.	R	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
34142	4-CH ₃	4	175	50	±		50	±
39744	2-(CH ₃) ₂ CH	4	75	50	0			
117934	3-(C ₂ H ₅) ₂ N	4	200	60	0		225	0
136180	3-(CH ₃) ₂ N-4-CH ₃	4	175	50	0	600	300	0(T), 0
43901	3,5-[(CH ₃) ₂ CH] ₂	4	200	40	0	> 750	500	0
138410	3-Cl	4	200	90	+, 0	650	300	±
138411	2-OCH ₃ -4-C ₂ H ₅	4	135	70	±, 0	500	150	0
145722	3-NO ₂ -4-CH ₃	4	175	50	0	550	300	+(T), 0
42760	2,3,6-(CH ₃) ₃	4	180	100	0			
151332	2-CH ₃ -4-Br	4	85	40	0	450	400	0
38489	2-CH ₃	5	430	160	+(T), ±	>1000	300	±
138418	2-(CH ₃) ₂ CH-4-CH ₃	5	300	150	±, 0	900	500	0
136182	3-(CH ₃) ₂ N-4-CH ₃	5	175	50	0	400	200	±(T)

TABLE 25

Cycloalkylalkylaminoethanesulfuric Acids



WR NO.	R	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
892	(CH ₂) ₅ CH	0	175	100	0	—	—	—
67657	2-norbornyl	0	240	160	0	—	—	—
3288	(CH ₂) ₆ CH	0	>100	50	0	—	—	—
2401	(CH ₂) ₇ CH	0	150	100	+	—	—	—
40334	2-bornyl	0	430	80	+(T), 0	>525	500	0
133569	(CH ₂) ₁₁ CH	0	100	35	+, ±	—	—	—
54558	2-OH-indanyl	0	520	200	0	—	—	—
4845	(CH ₂) ₂ CH	1	300	50	0	—	—	—
5879	(CH ₂) ₃ CH	1	150	100	0	—	—	—
2864	(CH ₂) ₅ CH	1	200	250	0(T), 0	—	—	—
25212	(CH ₂) ₁₀ CH	1	160	75	0	—	—	—
142080	1-adamantyl	1	250	100	+, 0	>1000	600	0
2571	(CH ₂) ₅ CH	2	90	50	+, ±	—	—	—
5982	3-cyclohexenyl	2	75	50	0	—	—	—

TABLE 25
(continued)^a

VR NO.	R	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
3341	(CH ₂) ₆ CH	2	80	50	+,0	—	—	—
142077	1-adamantyl	2	180	15	0	900	600	0
9095	(CH ₂) ₃ CH	3	200	50	0	—	—	—
3235	(CH ₂) ₄ CH	3	>150	112	0(T),0(T)	—	—	—
6135	(CH ₂) ₅ CH	CH(CH ₃)CH ₂	120	50	+,0	—	—	—
2942	(CH ₂) ₅ CH	3	150	100	+(T),+,0	>1000	800	0
151323	1-adamantyl	3	100	60	+,+	—	—	—
4535	3-cyclohexenyl	3	80	40	0	—	—	—
71471 ^a	3-CH ₃ C ₆ H ₁₀	CH(C ₂ H ₅)CH ₂	320	180	+,0	320	240	0(T),0
4484	2(=O)-4-CH ₃ C ₆ H ₈	C(CH ₃) ₂	150	25	0	—	—	—
3298	(CH ₂) ₄ CH	4	175	75	+,+,0	950	500	+
8315	(CH ₂) ₄ CH	CH(C ₂ H ₅)CH ₂	140	50	+,+	—	—	—
2691	(CH ₂) ₅ CH	4	40	20	+,+,+,0	>800	800	0

^a. A derivative of 2-aminopropanethiosulfuric acid.

TABLE 25
(continued)^a

VR NO.	R	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
3562	(CH ₂) ₅ CH	CH(C ₂ H ₅)CH ₂	300	100	+, +, +, +	>3000	1000	0
91635	(CH ₂) ₅ CH (L)	CH(C ₂ H ₅)CH ₂	300	70	+, +, +, 0	900	600	0
5035	3-cyclohexenyl	4	75	25	+, +, +, 0	900	500	0
3824	3-CH ₃ C ₆ H ₁₀	4	10	5	+, +, 0	—	—	—
3238	4-CH ₃ C ₆ H ₁₀	4	7	5	+, +, 0	900	800	+
6402	3-CH ₃ C ₆ H ₁₀	CH(C ₂ H ₅)CH ₂	170	100	+, +, +, +	>2000	600	0
3558	4-C ₂ H ₅ C ₆ H ₁₀	4	7	3	0	—	—	—
3614	2-CH ₃ OC ₆ H ₁₀	4	175	50	+, +, 0	>1250	750	+(T)
3236	4-CH ₃ OC ₆ H ₁₀	4	200	50	±, 0	> 800	800	0
3612	4-(CH ₂) ₅ CHC ₆ H ₁₀	4	10	10	+(T), ±	—	—	—
3564	2,4-(CH ₃) ₂ C ₆ H ₉	4	25	20	+(T), ±	—	—	—
3339	2,5-(CH ₃) ₂ C ₆ H ₉	4	25	15	+, +	—	—	—
3561	(CH ₂) ₆ CH	4	15	5	+, 0	>2000	1500	0
3566	2-decahydronaphthyl	4	18	8	+, ±	>1200	750	0

TABLE 25
(continued)⁴

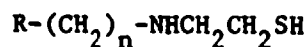
WR NO.	R	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
201724	1-adamantyl	4	20	10	+,0	>750	250	0
3613	(CH ₂) ₃ CH	5	75	50	+,+,0	>1250	800	0
4104	(CH ₂) ₄ CH	5	25	10	+,0	800	500	+
2906	(CH ₂) ₅ CH	5	10	5	0	—	—	—
6403	(CH ₂) ₅ CH	CH(CH ₃)(CH ₂) ₃	80	40	+,+,+,0	>1150	1000	0
5136	(CH ₂) ₅ CH	CH(C ₂ H ₅)(CH ₂) ₂	150	50	+,+,+,0	—	—	—
7466	(CH ₂) ₅ CH	CH ₂ CH(C ₂ H ₅)CH ₂	140	50	+,+,+,0	>2000	1600	0
6404	(CH ₂) ₅ CH	CH(n-C ₃ H ₇)CH ₂	300	150	0	—	—	—
5984	(CH ₂) ₆ CH	5	18	5	+,0	>1250	1200	0(T)
3302	(CH ₂) ₄ CH	6	> 10	10	+,+	>1000	800	+
9096	(CH ₂) ₄ CH	CH(n-Bu)CH ₂	150	50	+,0	—	—	—
2866	(CH ₂) ₅ CH	6	10	5	+,0	—	—	—
6400	(CH ₂) ₅ CH	CH(C ₂ H ₅)(CH ₂) ₃	75	25	+,0	>2000	1000	0
7467	(CH ₂) ₅ CH	CH ₂ CH ₂ CH(C ₂ H ₅)	44	30	+,+,+,+	—	—	—
3825	(CH ₂) ₆ CH	6	23	8	+,0	—	—	—

TABLE 25
(continued)⁵

WR NO.	R	n	INTRAPERITONEAL DATA				ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
4107	(CH ₂) ₄ CH	7	13	5	0		—	—	—
3831	(CH ₂) ₅ CH	7	15	5	0		—	—	—
4539	(CH ₂) ₄ CH	8	13	8	+(T), ±		1800	1000	0
4105	(CH ₂) ₅ CH	8		5	+, 0		1700	800	0
4536	(CH ₂) ₄ CH	9		5	+(T), 0		1600	1000	0(T)

TABLE 26

Cycloalkylalkylaminoethanethiols



WR NO.	R	n	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
2638	(CH ₂) ₂ CH	0	250	200	+(T), 0
227	(CH ₂) ₅ CH	0	85	60	0
956	2-OH-C ₆ H ₁₀	0	200	100	0
2398	1-C ₆ H ₅ -C ₆ H ₁₀	0	60	30	0
2392	4-(CH ₂) ₅ CH-C ₆ H ₁₀	0	150	50	0
2391	(CH ₂) ₆ CH	0	70	45	0
2394	(CH ₂) ₇ CH	0	175	25	0
74170	2-norbornyl	0	130	100	0
2468	(CH ₂) ₁₁ CH	0	50	30	0
41245	2-bornyl	0	74	56	+, 0
51983	1-adamantyl	0	63	20	0
125697	2-adamantyl	0	75	30	0
2058	(CH ₂) ₂ CH	1	88	50	0
2641	(CH ₂) ₃ CH	1	80	50	0
2639	(CH ₂) ₅ CH	1	80	30	0
2307	2-norbornyl	1	90	40	0
3156	2-CH ₃ -2-norbornyl	1	575	125	0
142078	1-adamantyl	1	85	30	0
3155	2-norbornyl	2	70	30	0
142075	1-adamantyl	2	50	25	+, 0
2650	(CH ₂) ₄ CH	3	75	25	0
31894	(CH ₂) ₅ CH	3	75	25	0
156784	1-adamantyl	3	> 60	60	(T), 0
31896	(CH ₂) ₄ CH	4	70	40	+, 0
4808	(CH ₂) ₅ CH	4	50	40	+, 0
33715	3-CH ₃ C ₆ H ₁₀	CH(C ₂ H ₅)CH ₂	62	25	0
34140	2,4-(CH ₃) ₂ C ₆ H ₉	4	40	15	±

TABLE 26
(continued)

<u>WR NO.</u>	<u>R</u>	<u>n</u>	<u>ALD₅₀ mg/kg</u>	<u>Drug Dose mg/kg</u>	<u>Rating</u>
39742	$(\text{CH}_2)_5\text{CH}$	$\text{CH}(\text{CH}_3)(\text{CH}_2)_3$	75	50	0
36957	$(\text{CH}_2)_4\text{CH}$	6	75	40	S(T)
2576	$(\text{CH}_2)_5\text{CH}$	6	75	30	+,0

TABLE 27

Cycloalkylalkylaminoethyldisulfides



WP. NO.	R	n	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
692	(CH ₂) ₅ CH	0	92	70	0
43680	2-bornyl	0	180	100	0
148667	1-adamantyl	1	75	30	0
196267	4-H ₂ NCH ₂ C ₆ H ₁₀	1	60	30	0
3023	(CH ₂) ₅ CH	4	22	15	±, 0
33713	(CH ₂) ₅ CH	CH(C ₂ H ₅)CH ₂	45	25	0
36952	(CH ₂) ₅ CH	CH(CH ₃)(CH ₂) ₃	45	10	0

TABLE 28

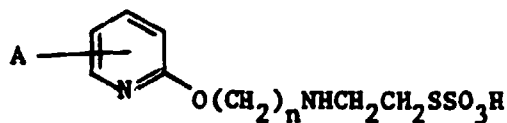
Cyclically alkylaminoethylphosphorothioates



WR No.	R	n	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
40335	2-bornyl	0	430	320	+,0
35979	1-adamantyl	0	240	80	+,+,0
125696	2-adamantyl	0	150	70	0
133567	(CH ₂) ₁₁ CH	0	70	30	0
74171	2-norbornyl	0	240	90	±
142076	1-adamantyl	2	70	35	+(T),0
4481	4-CH ₃ -2(=O)C ₆ H ₈	C(CH ₃) ₂	375	250	0
151321	1-adamantyl	3	115	70	+,0
159742	(CH ₂) ₅ CH	4	45	11	0
117909	(CH ₂) ₅ CH	CH(C ₂ H ₅)CH ₂	125	30	0
4480	2(=O)C ₆ H ₉	CH(n-C ₃ H ₇)	88	25	0
75235	4-C ₆ H ₁₁ -C ₆ H ₁₁	4	>1800	300	0

TABLE 29

2-Pyridyloxyalkylaminoethanethiosulfuric Acids



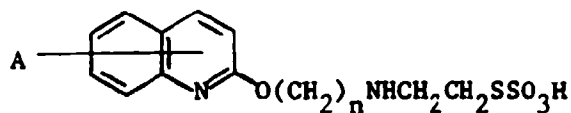
WR NO.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
37679	H	2		125	0			
104704	5-Cl	2	150	75	0(T),0			
99590	5-Br	2	175	100	0(T),0			
98080	H	3	195	100	0			
80859	3-Cl	3	160	80	0			
122961	5-Cl	3	150	90	±(T),+,0	800	400	0
54203	5-Br	3	125	80	+,±	> 900	500	0
91493	3-NO ₂	3	175	80	0			
91489	5-NO ₂	3	180	90	±,0			
80865	6-OC ₂ H ₅	3	105	60	0			
108504	5-Cl	4	190	100	+,+,0	>1200	600	0(T),0
104695	5-Br	4	180	100	+,+,0	> 900	500	0
82422	5-Cl	5	225	150	±(T),+(T),+(T),+,0	>1000	1000	0
138412	3,5-Cl ₂	5	175	50	+,+,+,0	900	450	+,±
99582	3-Br	5	170	90	±,±			
43900	5-Br	5	90	50	+,+,0			
50480	6-Br	5	140	100	0			
99581	3,5-Br ₂	5	160	50	+,+,±,0	>1200	800	0
99575	5-I	5	100	50	±,0			
117931	5-CN	5	175	80	0			

TABLE 29
(continued)

WR NO.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
104696	5-NO ₂	5	150	80	+,+	>900	600	0
85565	4-CH ₃	5	185	100	0			
94533	5-CH ₃	5	125	70	+,+,0	>900	600	0
106162	5-Cl	6	120	60	0(T),+,+	>800	600	0
91494	5-Br	6	225	50	0			
124950	3,5-Br ₂	6	250	15	+,0			
145723	6-Br	7	50	20	0			
146105	5-I	7	100	20	0			
94531	5-Br	10	160	80	0(T),0			

TABLE 30

2-Quinolylalkylaminoethanesulfonic Acids



WR No.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
104700	4-CH ₃	2	280	140	0			
122960	4-CH ₃ , 6-OCH ₃	2	100	50	+(T), +, +, 0			
106156	H	3	220	100	±, +, +, 0			
25930 ^a	H	3	450	100	0			
9463 ^b	H	3	125	100	0			
122968	4-OCH ₃	3	175	80	±, ±, 0			
54204	4-CH ₃	3	180	100	+, +, +, ±	>900	400	0
134784	4-CF ₃	3	160	30	±, 0			
120769	4-CH ₃ , 8-Cl	3	300	10	0			
108502	4-CH ₃ , 6-Cl	3	75	30	+, ±	>600	600	0
111490	4-CH ₃ , 6-OCH ₃	3	100	25	+, ±			
122970	4, 6-(CH ₃) ₂	3	125	70	+, +, +, ±	>900	600	0
126456	4-C ₃ H ₇	3	125	60	+, +, 0	>600	400	0
104706	4-CH ₃	4	225	100	+, +, ±, 0	>750	500	0
111486	4-Cl	5	275	10	0			
122959	4-OCH ₃	5	225	100	+, ±	>900	600	0
42761	4-CH ₃	5	740	560	0			
123953	4, 6-(CH ₃) ₂	5	115	30	0			
132199	4-CF ₃	5	250	5	0			
111492	4-CH ₃ , 6-Cl	5	175	70	0(T), 0			

TABLE 30
(Continued)

			INTRAPERITONEAL DATA			ORAL DATA		
WR No.	A	n	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
120768	4-CH ₃ ,8-Cl	5	325	20	0			
124951	4-C ₃ H ₇	5	120	5	0			
36955 ^c	7-Cl	5	250	150	0			
111491 ^d	H	5	175	30	0			
106157	4-CH ₃	6	90	15	0			

^a 5-Quinolyloxypropylaminoethanethiosulfuric acid.

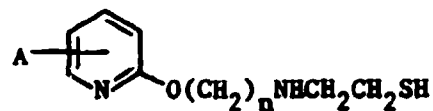
^b 8-Quinolyloxypropylaminoethanethiosulfuric acid.

^c 7-Chloro-4-quinolyloxypropylaminoethanethiosulfuric acid.

^d 1-Isoquinolyloxypropylaminoethanethiosulfuric acid.

TABLE 31

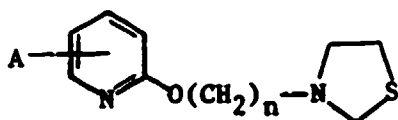
2-Pyridyloxyalkylaminoethanethiols



WR NO.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
26169	H	2	120	80	0(T),0			
99586	5-Br	2	110	50	0(T),0			
122961	5-Cl	3	87	40	0			
54202	5-Br	3	150	50	0			
111485	5-Cl	4	100	35	0	250	100	0
106155	5-Br	4	125	50	0			
85563	5-Cl	5	110	60	+,0	700	300	±(T)
159246	3,5-Cl ₂	5	130	70	±,0	510	250	0(T),0
104699	3-Br	5	125	50	0			
42764	5-Br	5	240	90	±,0			
99588	3,5-Br ₂	5	150	80	0			
99587	5-I	5	150	50	0,±	400	150	0
91491	4-CH ₃	5	97	40	0			
99579	5-CH ₃	5	80	45	0			
106165	5-Cl	6	140	60	+,0	350	150	0
91495	5-Br	6	140	60	+,±	350	200	±(T)
94536	5-Br	10	52	30	±,0			

TABLE 32

Substituted 2-[(3-thiazolidinylalkyl)oxy]pyridines



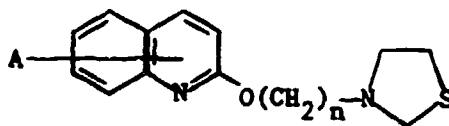
WR NO.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
104701	5-Cl	2	150	75	0(T),0	400	200	0
99576	5-Br	2	150	80	0(T),0			
122962	5-Cl	3	125	60	0	450	300	+ (T),0
147954	5-I	3	175	80	0	>900	600	+ ,0
108505	5-Cl	4	275	120	+,0	750	600	+,+
104703	5-Br	4	250	100	+,0	600	250	+
148743	5-I	4	>300	100	+ ,0	>1000	400	+,0
40641	H	5	>200	50	0			
85562	5-Cl	5	160	80	+,0	650	300	+,+
138413	3,5-Cl ₂	5	150	50	0	>900	450	+,+
99584	3-Br	5	280	100	0			
43898	5-Br	5	240	150	+,+	900	500	+(T),+,+
99583	3,5-Br ₂	5	>320	200	0			
94542	5-I	5	230	100	+,0	>900	600	+,+,+,0
132193	5-SCH ₃	5	200	60	0	550	300	0
94538	5-CH ₃	5	190	70	+ ,0	700	375	+ (T)
91496	5-Br	6	200	100	+,+	>525	300	+,+
126454	3,5-Br ₂	6	274	130	0	800	200	0
108503	5-Cl	6	220	75	+,+	>600	300	+,+,+

TABLE 32
(continued)

WR NO.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
132197	5-I	6	125	50	<u>+</u> ,0	>600	300	<u>+</u> , <u>+</u> , <u>+</u>
123950	5-CH ₃	6	200	60	0	500	150	+
144976	5-Cl	7	100	50	0	500	200	<u>+</u> , <u>+</u>
144975	5-Br	7	225	100	+	800	400	+(T), <u>+</u> ,0
145724	5-I	7	200	100	<u>+</u> ,0	>750	600	+(T),0
94543	5-Br	8	230	50	0	>600	150	<u>+</u>
94532	5-Br	10	50	25	0			

TABLE 33

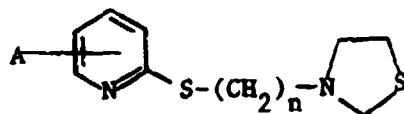
Substituted 2-[(3-thiazolidinylalkyl)oxyquinolines



WR NO.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
104705	4-CH ₃	2	250	50	0			
106161	H	3	120	60	$\pm, 0$	375	150	0
122958	4-OCH ₃	3	225	100	0	>900	500	0
136178	4-CF ₃	3	>360	40	0	>900	600	0
61134	4-CH ₃	3	320	180	+(T)	>900	500	$\pm$
111487	4-CH ₃ , 6-Cl	3	350	70	$\pm, 0$	>900	600	0
117930	4-CH ₃ , 8-Cl	3	>400	50	$\pm, 0$	>900	500	$\pm$
146098	4-CH ₃ , 6-OCH ₃	3	200	100	0			
123951	4, 6-(CH ₃) ₂	3	500	50	0	>500	500	$\pm$
106163	4-CH ₃	4	260	110	0	600	300	0
108501	H	5	225	100	+, 0	400	200	+, 0
111488	4-Cl	5	350	150	0	>900	500	0
123948	4-OCH ₃	5	>450	50	0	—	200	0
132196	4-CF ₃	5	200	50	0	800	400	$\pm$
43894	4-CH ₃	5	430	320	0	>600	300	0
117883	4-CH ₃ , 6-Cl	5	>375	300	$\pm, 0$	>450	400	0
123952	4-CH ₃ , 8-Cl	5	180	60	0	>900	600	0
123949	4, 6-(CH ₃) ₂	5	500	6	0	>600	400	0
106158	4-CH ₃	6	200	100	0	850	450	0

TABLE 34

Substituted 2-[(3-thiazolidinylalkyl)thiopyridines



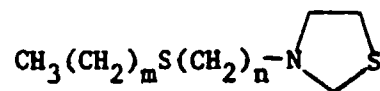
WR NO.	A	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
132195	5-Cl	3	200	50	0	625	170	0
138768	3,5-Cl ₂	3	225	100	0	950	500	0
157310	5-I	3	350	150	0	>600	300	0
159574	5-Cl	4	250	100	0	550	300	±(T), 0
159618	3,5-Cl ₂	4	350	300	0	>650	300	0
159619	5-Br	4	275	100	0	650	300	±
162862	5-I	4	225	125	±, 0	600	300	±, 0
126455	5-Cl	5	180	90	+, 0	675	300	+, 0
138417	3,5-Cl ₂	5	>300	100	+, 0	1000	500	±
132192	5-Br	5	275	100	+, 0	800	400	+, +
156717	3,5-Br ₂	5	>500	200	0	>600	600	0
134787	5-I	5	175	50	±, 0	700	300	+, +
132194	5-Cl	6	225	100	+, 0	700	300	+, +, 0
138769	3,5-Cl ₂	6	275	140	+, ±	1000	400	+, 0
162863	5-Br	6	300	200	+, ±	500	400	+, ±
152925	5-I	6	225	125	+, 0	>438	250	+, ±
166839	5-CH ₃	6	175	40	0	>300	300	+, ±
158490	5-Cl	7	56	30	±, 0	650	300	+(T), +(T), +, 0
162818	3,5-Cl ₂	7	275	125	0	>1050	800	0

TABLE 34
(continued)

<u>WR NO.</u>	<u>A</u>	<u>n</u>	<u>INTRAPERITONEAL DATA</u>			<u>ORAL DATA</u>		
			<u>ALD₅₀ mg/kg</u>	<u>Drug Dose mg/kg</u>	<u>Rating</u>	<u>ALD₅₀ mg/kg</u>	<u>Drug Dose mg/kg</u>	<u>Rating</u>
162864	5-Br	7	115	75	+,0	450	300	+,+
162865	5-I	7	125	100	+,0	300	200	+,+
160442	5-Cl	8	125	70	0	500	250	+(T),+,+,0
162866	5-I	8	150	100	0	250	200	+,0
158498	5-Cl	10	135	90	0(T),0	>750	300	+(T),0
162857	3,5-Cl ₂	10	525	250	0	>2000	1000	0
159621	5-Br	10	130	60	0	>600	400	0

TABLE 35

3-[(Alkylthio)alkyl]thiazolidines



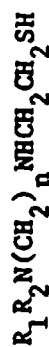
WR NO.	m	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
157843	5	2	250	125	+(T),+	>600	300	+(T),+
156715	6	2	250	100	+(T),0	550	250	+,0
156716	7	2	150	100	0	>600	400	+,0
156718	8	2	250	100	0	>350	300	0
154975	3	3	300	80	0	>600	300	0(T),0
154977	5	3	120	75	+,0	>300	200	+,0
157841	6	3	175	100	0	500	300	+,0
136179	7	3	125	50	0	>600	400	+,+,0
157076	8	3	250	100	+,0	>600	600	+,+
166826	3	4	350	125	0	650	300	+,0
166830	4	4	175	67	+,0	600	200	+,0
166836	5	4	110	60	+,0	500	300	+(T),+
157073	6	4	175	80	+,+	600	300	+(T),0
156714	2	5	300	75	0	>600	300	0(T),0
132727	3	5	160	60	+,0	900	250	0
157311	4	5	125	100	+(T),+,0	650	250	+,+,+
134783	5	5	75	30	+,0	500	250	+,+,+
158495	6	5	100	50	+,+	500	150	+,0
99580	7	5	120	60	+,0	>525	400	+,0
99585	9	5	125	80	0	>900	300	0

TABLE 35
(continued)

<u>WR NO.</u>	<u>m</u>	<u>n</u>	<u>INTRAPERITONEAL DATA</u>			<u>ORAL DATA</u>		
			<u>ALD₅₀ mg/kg</u>	<u>Drug Dose mg/kg</u>	<u>Rating</u>	<u>ALD₅₀ mg/kg</u>	<u>Drug Dose mg/kg</u>	<u>Rating</u>
154976	0	6	100	60	0	500	300	0
152922	1	6	300	100	0	>600	300	0
152924	2	6	160	75	0	>500	200	0
154978	3	6	>150	50	0	>300	300	+,0
157072	4	6	150	80	+,+	500	200	+,+,0
154979	5	6	125	60	+,+	175	90	+,0
157079	6	6	130	50	0	>1000	400	0
154980	7	6	>200	100	0(T),0	650	300	0
156720	8	6	150	80	0	>600	300	0
154976	0	6	100	60	0	500	300	0
157312	3	7	175	80	+,+,0	650	300	+(T),0

TABLE 36

Aminoalkylaminoethanethiols



WR NO.	R_1R_2	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
884	H, H	2	500	400	+(T), +, 0			
858	CH ₃ , H	2	350	300	+, 0			
6364	C ₂ H ₅ , H	2	200	150	0			
2472	H ₂ NCH ₂ CH ₂ , H	2	600	300	+, +	3500	1500	0
1751	HOCH ₂ CH ₂ , H	2	>800	600	+, 0			
3326 ^a	HOCH ₂ CH ₂ , H	2	300	200	0			
857	(C ₂ H ₅) ₂	2	100	35	0			
3100	HOCH ₂ CH ₂ CH ₂ , H	2	400	400	+(T), +			
3157 ^a	HOCH ₂ CH ₂ CH ₂ , H	2	300	150	0			
1079	CH ₃ CHOHCH ₂ , H	2	750	500	+, 0			
3137 ^a	CH ₃ CHOHCH ₂ , H	2	375	200	0			

TABLE 36
(continued)^a

WR NO.	$R_1 R_2$	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
3094	$\text{HOCH}_2\text{CHOHCH}_2, \text{H}$	2	1000	700	0			
3347 ^a	$\text{HOCH}_2\text{CHOHCH}_2, \text{H}$	2	700	600	0(T), 0			
2477	$\text{C}_2\text{H}_5\text{OCH}_2\text{CH}_2, \text{H}$	2	150	20	0			
2414	$\text{HOCH}_2\text{CH}(\text{C}_2\text{H}_5), \text{H}$	2	300	250	0(T), 0			
1787	$\text{HOCH}_2\text{C}(\text{CH}_3)_2, \text{H}$	2	88	25	0			
3066	$\text{H}(\text{OCH}_2\text{CH}_2)_2, \text{H}$	2	450	600	0(T), 0			
88894	$\text{CH}_3\text{S}(\text{CH}_2)_3, \text{H}$	2	120	80	0(T), 0			
778	$\text{n-C}_4\text{H}_9, \text{H}$	2	75	25	0			
2404	$\text{C}_6\text{H}_5\text{-CH}_2\text{CH}_2, \text{H}$	2	40	20	0			
2415	$\text{n-C}_6\text{H}_{13}, \text{H}$	2	40	25	0			
2363	$\text{H}_2\text{N}(\text{CH}_2)_6, \text{H}$	2	80	25	0			
2220	$\text{n-C}_8\text{H}_{17}, \text{H}$	2	---	30	0			
3846 ^a	$\text{n-C}_8\text{H}_{17}, \text{H}$	2	30	10	0			
3201	$\text{n-C}_{10}\text{H}_{21}, \text{H}$	2	60	40	0			

TABLE 36
(continued)³

WR NO.	R ₁ R ₂	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
3344 ^a	$\overline{n-C_{10}H_{21}}, H$	2	75	15	0(T), 0			
1065	H, H	3	300	150	+, +, $\pm$, 0	500	250	+ , 0
33278 ^a	H, H	3	84	70	$\pm$, 0	750	500	0(T), 0
183159 ^a	CH_3, H	3	116	100	+, +, $\pm$, 0	>500	500	+ , 0
915	$(CH_3)_2$	3	250	200	$\pm$, 0			
6365	C_2H_5, H	3	350	75	0			
1063	$(C_2H_5)_2$	3	75	50	0			
2153	$HOCH_2CH_2, H$	3	450	175	+			
1821	$H_2N(CH_2)_3, H$	3	88	50	0			
1682	$H_2N(CH_2)_3, CH_3$	3	75	25	0			
2309	$(\overline{n-C_3H_7})_2$	3	125	100	0			
35980	$H_2N(CH_2)_4, H$	3	125	80	0(T), 0	>1200	400	0
159569	(2-thienyl) CH_2, H	3	75	40	0(T), 0	> 300	150	0
2311	$\overline{n-C_{10}H_{21}}, CH_3$	3	50	25	0			

TABLE 36
(continued)*

WR NO.	R ₁ R ₂	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
25210	(CH ₂) ₅	3		60	0			
4115	(CH ₂) ₅ CH ₂ H	3	150	100	0(T), 0			
4283 ^a	(CH ₂) ₅ CH ₂ H	3	45	25	0			
157448	1-adamantyl, H	3	100	50	+, 0	350	200	0
159567	(3-pyridyl)CH ₂ , H	3	70	40	0			
157529	H, H	CH ₂ CH ₂ CH(CH ₃)	300	200	+, +, 0	380	150	+, ±
156788	H, H	CH ₂ CH(CH ₃)CH ₂	280	200	+, +, 0	380	150	+, ±
35983 ^b	H, H	3	74	56	0			
33773 ^c	H, H	3	180	100	0	800	500	0
1783	H, H	CH ₂ CHOHCH ₂	325	200	0			
1123	(C ₂ H ₅) ₂	CH ₂ CHOHCH ₂	200	50	0			
1727	H, H	4	175	100	0			
1057	(C ₂ H ₅) ₂	CH ₂ CH ₂ CH ₂ CHCH ₃	75	50	0			
165571 ^a	(C ₂ H ₅) ₂	CH ₂ CH ₂ CH ₂ CHCH ₃	18	10	0	180	150	0(T), 0

TABLE 36
(continued)^s

WR NO.	R ₁ R ₂	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
2300	(CH ₂) ₅	4	90	25	0			
1729	H,H	5	188	100	+,±			
149024 ^a	H,H	5	130	75	0	700	300	0
156789	CH ₃ ,H	5	180	50	±,0	500	200	+(T),0
156792	C ₂ H ₅ ,H	5	130	90	0(T)	350	175	0
1562	H,H	6	160	125	+			
1730	H,H	7	150	100	0			
1731	H,H	9	138	100	0			
2405	HOCH ₂ CH ₂ ,H	9	120	75	0			
1732	H,H	10	113	75	0			
2335	HOCH ₂ CH ₂ ,H	10	120	75	0			
1755	H,H	11	125	50	0			
1893	H,H	12	80	50	0			

a. The corresponding disulfide

b. H₂N(CH₂)₃NHC(CH₃)₂CH₂SH

c. H₂N(CH₂)₃NHCH(CH₃)CH₂SH

TABLE 37

Aminoalkylaminoethylphosphorothioates



WR No.	R_1R_2	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
2578	H, H	2	1300	800	+, +, +, 0	4000	2000	0
4333	CH ₃ , H	2	900	400	+, +			
3283	C ₂ H ₅ , H	2	850	500	+(T), +, 0	>800	400	0
9054	CH ₃ OCOCH ₂ CH ₂ , H	2	1400	1000	0(T), 0			
170432	(C ₂ H ₅) ₂	2	125	80	0(T), 0	>160	100	0
46358	NCCH ₂ CH ₂ , H	2	130	100	0(T), 0			
46359	NC(CH ₂) ₂ O(CH ₂) ₂ , H	2	1200	600	+, 0	>1500	1000	+
142824	(2-thienyl)CH ₂ , H	2	175	15	0			
108531	(CH ₂) ₂ CHC(CH ₃)H	2	125	100	0(T), 0(T)			
108530	4-(CH ₃) ₂ NC ₆ H ₄ CH ₂ , H	2	225	120	0			
3284	9-acridyl, H	2	80	40	0(T), 0			
8386	n-C ₈ H ₁₇ , H	2	160	50	0(T), 0			
81856	2-norbornyl, H	2	35	20	0(T), 0(T)			

TABLE 37²
(Continued)

WR No.	$\frac{R_1 R_2}{n}$	INTRAPERITONEAL DATA			ORAL DATA		
		ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
74126	geranyl	100	56	0			
74127	citronyl	320	40	0			
80393	$(CH_2)_7CH, H$	25	15	0			
80406	$(CH_2)_{11}CH, H$	70	40	0(T), 0			
169402	2-adamantyl, H	15	8	0	40	20	0
2721	H, H	950	600	+, +, +, +, 0	1500	600	+, +
3689	CH_3, H	800	400	+, +, +, 0	>1750	1000	+(T), +, +
170427	$(CH_3)_2$	200	100	+, 0	750	500	0(T), 0
173151	$(CH_3)_3^+$	20	15	0(T), 0	400	200	0(T), 0(T)
5144	C_2H_5, H	750	500	+, +, 0	1500	500	+
165930	$(C_2H_5)_2$	150	75	0	> 300	200	0(T), 0
190073	$HOCH_2CH_2, H$	200	100	+, 0	400	300	0(T), 0
190219	CH_3OCOCH_2, H	650	300	+, 0	>1000	1000	0
181190	H, H $CH_2CH(OCOCH_3)CH_2$	>1000	500	+, +	>1000	1000	0
3310	9-acridyl, H	38	25	0	300	200	0

TABLE 37 ³
(Continued)

WR No.	R ₁ R ₂	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
74178	CH ₃ CONH(CH ₂) ₄ , H	3	430	160	0			
156793	(2-thienyl)CH ₂ , H	3	60	25	0	> 900	600	0
92979	3-CH ₃ C ₆ H ₄ CH ₂ , H	3	160	90	0			
74062	C ₆ H ₅ CH ₂ , H	3		180	0			
25881	(4-quinolyl)CH ₂ , H	3	600	300	0(T), 0			
70037	(CH ₂) ₃ OCHCH ₂ , H	3	430	320	±, 0			
70040	n-C ₇ H ₁₅ , H	3	320	180	0			
8369	n-C ₈ H ₁₇ , H	3	175	125	±, 0			
70039	(CH ₂) ₅ CH, H	3	>1800	160	0			
170440	1-adamantyl, H	3	130	75	0	800	300	0
156787	H, H		750	300	+, +, 0	1050	600	+, +, 0
183979	H ₂ NC(=NH), H		125	80	+, +, 0	> 500	300	+(T), 0
151324	H, H		900	400	+, +, +, 0	>1000	1000	+(T), ±
183978	H ₂ NC(=NH), H		140	80	+, +, +, 0	550	500	0(T), 0
182141	CH ₃ , H		> 500	250	+, +, 0	700	500	0
126158	H, H		600	300	+, +, 0	>2000	1000	+(T), ±

TABLE 37 Δ
(Continued)

WR No.	R_1R_2	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
33769	H, H ^a	3	450	240	+			
25877	H, H ^b	3	900	600	+, +, +, 0			
120050	$\pm$ -C ₄ H ₉ , H ^c	3		250	+, +, 0		500	0
151325	H, H	CH ₂ CHOHCH ₂	825	600	+(T), +, +, +, +	>1800	1500	0(T), +, 0
2822	H, H		800	400	+, +, 0	900	600	+
62945	CH ₃ , H	4	240	180	+(T), 0	1200	800	0
186691	(CH ₃) ₂	4	350	100	+, +, +	> 600	300	+, 0
114392	C ₂ H ₅ , H	4	90	45	0			
159568	(C ₂ H ₅) ₂	CH ₂ CH ₂ CH ₂ CHCH ₃ 	80	50	+, 0	180	100	0
80405	geranyl		80	50	0			
80394	(CH ₂) ₇ CH, H	4	160	70	0			
74128	(CH ₂) ₁₁ CH, H	4	56	32	0			
2823	H, H	5	900	600	+(T), +, +, 0	1125	500	+, +
149846	CH ₃ , H	5	600	200	+(T), +, 0	800	300	+, +
184192	(C ₂ H ₅) ₂	5	60	20	0	180	150	(T), 0(T)
199275	H ₂ NC(=NH), H	5	75	40	+, 0	>300	450	0

TABLE 37 s
(Continued)

WR No.	R ₁ R ₂	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
2824	H,H	6	600	300	+,+,0	900	700	+
190072	H,H	<u>trans</u> -CH ₂ C ₆ H ₁₀ CH ₂	> 600	400	+,+,+,0	>1000	1000	0
193692	H,H	<u>cis</u> -CH ₂ C ₆ H ₁₀ CH ₂	170	90	+,0	> 500	400	0(T),0

a H₂N(CH₂)₃NHCH(CH₃)CH₂SPO₃H₂

b H₂N(C₆H₅)₃NHC(CH₃)₂CH₂SPO₃H₂

c (CH₃)₃CNH(CH₂)₃NHC(CH₃)₂CH₂SPO₃H₂

TABLE 38

Aminoalkylaminopropanethiols



WR NO.	R	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
957	H	2	350	300	+(T), 0			
1066	CH ₃	2	>400	250	0			
151326	CH ₃	3	250	125	+, +, +, +	>500	500	+, +, +
1040	C ₂ H ₅	2	281	225	0			
958	n-C ₄ H ₉	2	88	50	0			
1045	H	6	75	60	0(T)			

TABLE 39

Aminoalkylaminopropylphosphorothioates

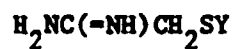


WR NO.	R	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
74172	H	2	1300	800	+(T), +, 0	>2250	1500	+, 0
44923	H	3	550	300	+, +, +, +, ±	>1200	700	+(T), +
151327	CH ₃	3	750	300	+, +, +, +, ±	>1000	600	+, +, 0
80855	H	4	225	100	0			
149023	H	5	120	60	0	650	300	0(T)
159947 ^a	H	5	220	120	±, 0			
180112	H	CH ₂ C(CH ₃) ₂ CH ₂	500	400	+(T), 0	>1000	500	0(T), 0
172730	H	CH ₂ CHOHCH ₂	>700	600	+, ±			
190222	H ₂ NC(=NH)	3	180	90	+(T), +, +, +	450	250	0
142489 ^b	H	3	450	400	+, +, ±, 0	>1800	600	0
149849 ^c	H	4	260	150	0	> 500	500	0

a. H₂N(CH₂)₅NHCH₂CHOHCH₂SPO₃H₂b. H₂N(CH₂)₃NHCH₂CHOHCH₂SPO₃H₂c. H₂N(CH₂)₄NHCH₂CHOHCH₂SPO₃H₂

TABLE 40

Parent Acetamidine Derivatives



WR NO.	Y	INTRAPERITONEAL DATA			ORAL DATA		
		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
76842	H	52	24	+,+,0	150	80	+(T),+,+
166817	SCH ₂ C(=NH)NH ₂	60	25	+,+,0	125	50	+,+,+,0
1551	SO ₃ H	87	50	+,+,0	300	150	+,+
108250	PO ₃ H ₂	100	75	+(T),+	135	75	+,+,0

TABLE 41

Alkyl- α -amidininium Thiosulfates

WR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
1551	H	87	50	+, +, 0	300	150	+, +
1757	CH ₃	100	75	+, 0	>450	300	0
1758	CH ₃ CH ₂	175	100	S			
2703	CH ₃ (CH ₂) ₂	150	90	+(T), 0			
2848	(CH ₃) ₂ CH	150	100	0			
2726	CH ₃ (CH ₂) ₃	75	50	+, 0			
166822	(CH ₃) ₃ C	175	75	0	>900	800	0
2049	CH ₃ (CH ₂) ₄	87	50	+(T), 0			
3308	(CH ₃) ₂ CHCH ₂ CH ₂	70	40	+(T), 0	375	125	±
2706	CH ₃ (CH ₂) ₈	4	2.5	0			
166823	(C ₂ H ₅) ₃ CCH ₂	30	18	+, +	88	45	+, +
2608	CH ₃ (CH ₂) ₉	3	2	0			
147953	HOCH ₂ CH ₂	>600	300	+(T), +, 0	>1050	600	0

TABLE 41
(continued)

VR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
148747	$\text{HOCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2$	350	150	0(T), 0	>900	450	0
147956	$\text{HOCH}_2(\text{CH}_2)_2$	250	120	0	>1050	600	0
4112	$\text{CH}_3\text{OCH}_2(\text{CH}_2)_2$	150	50	0(T), 0	>900	600	0
29655	$\text{CH}_3\text{SCH}_2(\text{CH}_2)_2$	100	50	+(T), +			
145727	$\text{HOCH}_2(\text{CH}_2)_5$	175	80	0	900	600	0

TABLE 42

Arylalkyl- α -amylthiothiosulfates

WR NO.	R	INTRAPERITONEAL DATA				ORAL DATA	
		ALP50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
1530	C_6H_5	140	100	0(T), 0			
1756	$\text{C}_6\text{H}_5\text{CH}_2$	88	25	0(T), 0			
60239 ^a	$\text{C}_6\text{H}_5\text{CH}_2$	56	25	0	150	112	0(T), 0(T)
8161	$4\text{-CH}_3\text{OC}_6\text{H}_4\text{CH}_2$	87	65	+(T), +, 0	>600	200	0(T), 0
60238	$3,4\text{-(CH}_3)_2\text{C}_6\text{H}_3\text{CH}_2$	130	20	0	500	100	0
197499	1-naphthylmethyl	180	50	+(T), 0	>600	600	0
197486 ^b	1-naphthylmethyl	45	20	+, +	280	100	+, 0
197500	2-naphthylmethyl	60	20	+, +	>900	200	0
199737 ^c	2-naphthylmethyl	45	20	+, +, +	150	50	+, +
1867	$\text{C}_6\text{H}_5\text{CH}_2\text{CH}_2$	40	30	+, +	190	100	0(T), +

a. The corresponding thiol, N-benzyl- α -mercaptoacetamidineb. The corresponding disulfide, N-(1-naphthylmethyl)- α -acetamidine disulfidec. The corresponding disulfide, N-(2-naphthylmethyl)- α -acetamidine disulfide

TABLE 42
(continued)

WR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
31899	4-HOC ₆ H ₄ CH ₂ CH ₂	150	75	+,0			
41266	'-CH ₃ OC ₆ H ₄ CH ₂ CH ₂	65	28	+,+	>750	300	0(T),0(T),0
144981	3,4-(CH ₃ O) ₂ C ₆ H ₃ CH ₂ CH ₂	250	50	+,0	>900	600	0
2707	C ₆ H ₅ (CH ₂) ₃	30	12.5	0			
2743	C ₆ H ₅ (CH ₂) ₄	40	15	+,0	75	50	0
3856	C ₆ H ₅ (CH ₂) ₅	8	3	0			

TABLE 43

Phenoxy- and Phenylthioalkyl- α -amidinium Thiosulfates

WR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
171079 ^a	4-(CH ₃) ₃ COC ₆ H ₄ SCH ₂	28	8	+, 0	>300	150	+, +
8312	C ₆ H ₅ SCH ₂ CH ₂	60	40	0(T), 0			
32379	4-CH ₃ C ₆ H ₄ SCH ₂ CH ₂	53	30	+, +, +, 0	300	80	+
39047	4-ClC ₆ H ₄ SCH ₂ CH ₂	56	16	+(T), 0	>600	400	+(T)
146092	C ₆ H ₅ O(CH ₂) ₃	75	30	+, +, 0	650	100	0(T)
60237	C ₆ H ₅ O(CH ₂) ₄	130	100	0(T), +, +			
8316	C ₆ H ₅ CH ₂ OCH ₂ CH ₂	60	40	+, +, 0	90	50	0
8317	C ₆ H ₅ CH ₂ SCH ₂ CH ₂	45	20	+, 0	110	80	+
37720	C ₆ H ₅ CH ₂ O(CH ₂) ₃	30	20	+(T), 0	300	70	+

a. The corresponding disulfide, N-(4-t-butoxy)phenylthiomethyl- α -acetamidine disulfide.

TABLE 43

Phenoxy- and Phenylthioalkyl- α -amidinium Thiosulfates

WR NO.	R	INTRAPERITONEAL DATA				ORAL DATA	
		ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
171079 ^a	4-(CH ₃) ₃ COCC ₆ H ₄ SCH ₂	28	8	+, 0	>300	150	+, ±
8312	C ₆ H ₅ SCH ₂ CH ₂	60	40	0(T), 0			
32379	4-CH ₃ C ₆ H ₄ SCH ₂ CH ₂	53	30	+, +, ±, 0	300	80	+
39047	4-ClC ₆ H ₄ SCH ₂ CH ₂	56	16	+(T), 0	>600	400	+(T)
146092	C ₆ H ₅ O(CH ₂) ₃	75	30	+, +, 0	650	100	0(T)
60237	C ₆ H ₅ O(CH ₂) ₄	130	100	0(T), +, +			
8316	C ₆ H ₅ CH ₂ OCH ₂ CH ₂	60	40	+, +, 0	90	50	0
8317	C ₆ H ₅ CH ₂ SCH ₂ CH ₂	45	20	+, 0	110	80	+
37720	C ₆ H ₅ CH ₂ O(CH ₂) ₃	30	20	+(T), 0	300	70	±

a. The corresponding disulfide, N-(4-t-butoxy)phenylthiomethyl- α -acetamidine disulfide.

TABLE 44
(continued)¹

WR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
37719	(CH ₂) ₇ CH	35	20	+, +	450	200	0(T)
166829	(CH ₂) ₇ CHCH ₂	19	10	+(T), +, 0	200	100	(T), +, 0
166827 ^b	(CH ₂) ₇ CHCH ₂	38	25	+(T), +, 0	80	45	+(T), +
166831	(CH ₂) ₆ CHO(CH ₂) ₂ ³	17	9	+, 0	>60	60	+, +
149526	HOCH ₂ C ₆ H ₁₀ CH ₂	50	50	0	>1000	800	0
150633	(CH ₂) ₅ CHSCH ₂ CH ₂	40	15	+, 0	300	175	0(T), 0
204172	(CH ₂) ₇ CHSCH ₂ CH ₂	20	10	+(T), +, 0	180	100	+, +, +, 0
157798	1-Ad ^f	55	25	+, 0	>600	200	0(T), 0
199634 ^c	1-Ad	55	40	+(T), +, +	180	100	+(T), 0
94140	1-Ad-CH ₂	25	10	+(T), +	>300	200	0
142079 ^d	1-Ad-CH ₂	150	60	+, 0	450	200	+, +
157077	3,5-(CH ₃) ₂ -1-AdCH ₂	44	20	0	>600	600	0
157075	1-Ad-CH ₂ CH ₂	40	10	+, 0	>600	600	0

TABLE 44
(continued)³

WR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
201731 ^e	3,5-(CH ₃) ₂ -1-AdCH ₂ CH ₂	8	4	+,0	25	15	0
157799	1-Ad-(CH ₂) ₃	8	5	0(T),+	>600	600	0
201730	3,5-(CH ₃) ₂ -1-Ad(CH ₂) ₃	15	8	0	>300	300	+,0
199631	1-Ad-(CH ₂) ₄	15	10	0(T),0	>300	600	0
156842	1-Ad-(CH ₂) ₅	10	6	0	>350	100	0
201729	1-Ad-(CH ₂) ₆	15	8	0(T),0	>900	600	0(T),0(T)
166717	2-Ad	38	20	+,+,0	280	200	0
199271	2-Ad-CH ₂ CH ₂	12	5	+,0	350	200	0
199268	2-Ad-(CH ₂) ₃	7	5	0	>600	200	0
145040	1-Ad-OCH ₂ CH ₂	75	30	+,+	600	400	+,0
159942	1-Ad-SCH ₂ CH ₂	15	5	0	180	75	+,0
149750	1-Ad-OCH(CH ₃)CH ₂	60	30	+(T),+,+	>300	300	0
145378	1-Ad-O-(CH ₂) ₃	35	15	+,0	>300	200	0

TABLE 44
(continued)⁴

WR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
193687	2-Ad-S-CH ₂ CH ₂	13	5	+,0	180	100	0(T),0
193684	2-Ad-S-(CH ₂) ₃	8	3	0	>300	100	0
92973	2-Bo ^g	30	15	+(T),+,0	225	100	+(T),+,+
204159	2-Bo-SCH ₂ CH ₂	11	5	+,0	350	200	0(T),0(T),0
204158	2-Bo-O(CH ₂) ₃	5	3	+,0	80	100	0(T),0(T)
151358	<u>exo</u> -3-Bo-O(CH ₂) ₃	12	6	0	>350	300	0(T),0(T)
156917	<u>endo</u> -3-Bo-O(CH ₂) ₃	19	13	+(T),+	>600	600	0(T),0(T)
98060	<u>exo</u> -2-Nbo ^h	56	36	+,+	250	200	0(T),0
113191	<u>endo</u> -2-Nbo	50	30	+,0	250	75	0
94292	<u>endo</u> -2-Nbo-CH ₂	44	20	+,+,0	140	60	+
94293	7,7-(CH ₃) ₂ -2-Np-CH ₂ ⁱ	63	30	+,+,+,0	380	200	0

f. Ad = adamantyl

g. Bo = bornyl

h. Nbo = norbornyl

i. Np = norpinyl

a. Cycloheptylmethyl- α -amidinium phosphorothioate

b. Cyclooctylmethyl- α -amidinium phosphorothioate

c. 1-adamantyl- α -amidinium phosphorothioate

d. 1-adamantylmethyl- α -amidinium phosphorothioate

e. 3,5-dimethyl-1-adamantylmethyl- α -amidinium phosphorothioate

TABLE 45

Cycloalkyl- α -amidinium Disulfides

WR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
166841	(CH ₂) ₄ CHCH ₂	60	20	+,±	63	35	±,0
197494	(CH ₂) ₅ CH	35	19	±,0	125	100	0(T),0
197511 ^a	(CH ₂) ₅ CH	40	20	±,0	80	30	±,0
193682	(CH ₂) ₅ CHCH ₂	25	10	+,±	150	30	+,+,0
166847	(CH ₂) ₅ CH(CH ₂) ₃	6	2.5	±,0	70	30	+(T),±
193564	(CH ₂) ₅ CH(CH ₂) ₄	3	1	±,0	28	16	0
166843	(CH ₂) ₆ CH	38	20	+,+,0	150	50	0
151331	(CH ₂) ₆ CHCH ₂	15	10	+(T),+,0	140	80	±(T),+,±,0
166825 ^a	(CH ₂) ₆ CHCH ₂	18	8	+,0	30	15	±,0
166848	(CH ₂) ₆ CHCH ₂ CH ₂	5	15	0(T),0	50	30	0(T),0

TABLE 45
(continued)²

WR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
197490	(CH ₂) ₇ CH	35	15	+,0	> 90	60	+,±
166764	(CH ₂) ₇ CHCH ₂	13	6	+(T),±	>150	50	+,+,0
199740	(CH ₂) ₇ CHCH ₂ CH ₂	8	4	+,±	>150	50	+(T),+,±
193681	(CH ₂) ₅ CHSCH ₂ CH ₂	11	5	+,±	80	100	+(T),+,±
204163	(CH ₂) ₇ CHSCH ₂ CH ₂	5	3	0	> 60	30	+,0
201722	1-Ad ^b	45	40	(T),+,+,0	125	100	0(T),±
166834 ^a	1-Ad	40	20	+,+,0	> 75	40	+,±,0
155419	1-Ad-CH ₂	100	50	0(T),0	325	100	±(T),+
109342 ^a	1-Ad-CH ₂	30	12	+(T),+,±,0	140	30	+,+,0
166850	3,5-(CH ₃) ₂ -1-AdCH ₂	5	3	±,0	250	50	+(T),+,0
196264	1-Ad-CH ₂ CH ₂	6	3	+,0	80	50	+(T),+,0
201727	3,5-(CH ₃) ₂ -1-AdCH ₂ CH ₂	7	4	+(T),+,±	>300	50	+,+
158502	1-Ad-(CH ₂) ₃	12	7.5	0(T),0		50	0

TABLE 45
(continued)³

WR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
201726	3,5-(CH ₃) ₂ -1-Ad(CH ₂) ₃	18	3	0	>300	300	+,0
199618	1-Ad-(CH ₂) ₄	5	3	0(T),0	>300	100	+(T),+(T)
199617	1-Ad-(CH ₂) ₅	8	10	0(T),0	>200	200	+(T),+,+,0
201725	1-Ad-(CH ₂) ₆	15	8	0	>600	600	0,+,0
196265	2-Ad	35	10	+,+	70	40	+,+
166832 ^a	2-Ad	17	10	+,0	35	20	+,0
181612	2-Ad-CH ₂	18	10	+,+	275	100	+(T),+
199270	2-Ad-CH ₂ CH ₂	8	4	+,0	100	80	+(T),+(T),+
199269	2-Ad-(CH ₂) ₃	8	3	0	>80	80	+(T),+
169403	1-Ad-SCH ₂ CH ₂	15	8	+,+	200	75	+,+
193678	2-Ad-S-CH ₂ CH ₂	13	5	+,0	>180	20	+,+,0
193677	2-Ad-S-(CH ₂) ₃	7	3	0	300	80	+,+,+,0

TABLE 45
(continued)^a

WR NO.	R	INTRAPERITONEAL DATA			ORAL DATA		
		ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
199739	2-Bo ^c	18	8	+,±	60	30	+,±
204157	2-Bo-SCH ₂	8	4	+,0	>60	40	+,±
199746	exo-2-Nbo ^d	40	15	+,0	140	80	0(T),±
199747	endo-2-Nbo	45	15	+,0	100	60	+(T),+,0
197516	endo-2-Nbo-CH ₂	25	10	+,0	140	50	+,±
197487	7,7-(CH ₃) ₂ -2-Np ^e	10	7	+(T),+,+	145	50	+(T),+,0

a. The corresponding thiol.

b. Ad = adamantyl

c. Bo = bornyl

d. Nbo = norbornyl

e. Np = norpinyl

TABLE 46

Effect of Chain Length on Activity of Mercaptoamides and Derivatives



WR NO.	Y	n	INTRAPERITONEAL DATA			ORAL DATA		
			ALD50 mg/kg	Drug Dose mg/kg	Rating	ALD50 mg/kg	Drug Dose mg/kg	Rating
76842	H	1	52	24	+, +, 0	150	80	+(T), +, +
2106	H	2	190	125	+, ±			
1551	SO ₃ H	1	87	50	+, +, 0	300	150	+, ±
1964	SO ₃ H	2	350	200	+, +	800	800	±(T), +, +, ±
108250	PO ₃ H ₂	1	100	75	+(T), +	135	75	+, +, 0
67698	PO ₃ H ₂	3	240	180	+, 0	900	600	+
16817	disulfide	1	40	10	+, +, 0	100	40	+, +, 0
2107	disulfide	2	80	100	+, ±	700	300	±, ±

TABLE 47

Nc-nitrogen Antiradiation Compounds

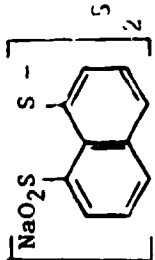
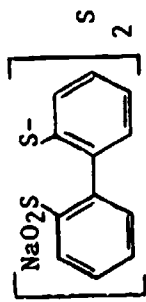
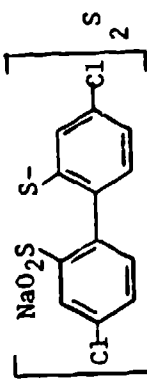
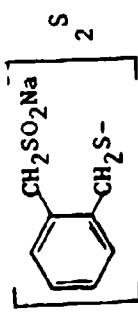
WR NO.	Structure	INTRAPERITONEAL DATA			ORAL DATA		
		ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating	ALD ₅₀ mg/kg	Drug Dose mg/kg	Rating
19635	$(\text{CH}_3\text{CHOHCH}_2\text{S-})_2$	510	400	$+, \pm, 0$			
34678	$(\text{HSCH}_2\text{CHOH-})_2$ (threo)	160	80	$\pm, \pm$	540	200	0
149997	$[\text{NaO}_2\text{S}(\text{CH}_2)_4\text{S-}]_2$	800	400	0, +			
168643	$[\text{NaO}_2\text{S}(\text{CH}_2)_4\text{S-}]_2\text{S}$	>950	300	$+, +, +, +, \pm, 0$	>900	600	$+, +, +, \pm$
23547	$\text{CH}_3(\text{CH}_2)_3\text{S}(\text{CH}_2)_3\text{SH}$	240	56	$+, +$			
179351	$\{\text{NaO}_2\text{SCH}_2[\text{CH}(\text{OCOCH}_3)]_2\text{CH}_2\text{S}\}_2\text{S}$	>900	300	0	>900	600	0
186034		135	75	$\pm, 0$			
187144		130	40	$0, +, +, +, 0$	>900	500	$\pm, \pm, \pm$
188301		125	100	$+, \pm, 0$	>900	500	$\pm, 0$
179350		750	200	$+, +, \pm$	>800	800	$+, 0$

TABLE 48

Compounds Effecting at least 50% Survival at a Dose of One Fourth of the Highest Dose Tested, either I.P. or P.O. and the Table in which the Data Appear other than the Survey

WR NO.	TABLE	WR NO.	TABLE
1964	46	138412	29
2529	Survey	151325	37
2578	37	151327	39
2823	27	158490	34
3050	14	168643	47
4546	22	176241	10
4788	22	176542	10
5035	25	179209	10
6402	25	183977	10
6403	25	183978	37
7467	25	187093	10
44923	39	187094	10
54204	30	187144	47
76842	46	190072	37
76843	Survey	190222	39
82422	29	193702	9
91635	25	194423	10
94293	44	197487	45
94542	32	199270	45
122960	30	199737	42
122970	30	204172	44

TABLE 49

Compounds Effecting at Least 50% Survival at a Dose ≤ 15 mg/kg,
Either I.P. or P.O., and the Table in which the Data Appear.

WR NO.	TABLE	WR NO.	TABLE	WR NO.	TABLE
1607	11	16817	46	166832	45
1818	11	24245	44	166834	45
2245	12	32379	43	166843	45
2411	12	76842	40	169403	45
2691	25	92973	44	171079	43
2866	25	94140	44	181612	45
3050	14	94292	44	190222	39
3238	25	94293	44	193678	45
3302	25	109342	45	193681	45
3336	22	122960	30	193682	45
3337	14	138412	29	193687	44
3339	25	138415	20	196264	45
3340	14	142079	44	196265	45
3342	14	145837	44	197487	45
3358	12	146092	43	197490	45
3561	25	149750	44	197516	45
3566	25	150632	44	199270	45
3610	20	150633	44	199271	44
3824	25	150637	44	199737	42
3825	25	151331	45	199739	45
4104	25	156917	44	199740	45
4105	25	166717	44	199746	45
4538	20	166764	45	199747	45
4539	25	166817	40	201722	45
4544	20	166820	44	201724	25
4548	14	166823	41	201727	45
4769	22	166825	45	204157	45
4783	14	166827	44	204158	44
5035	25	166829	44	204159	44
5984	25	166831	44	204172	44
6403	25				
7467	25				

WALTER REED NUMBER INDEX

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
1	$C_3H_3N_3S_3$	83	$C_{14}H_{16}N_{10}S_2$
7	$C_{10}H_{23}NS$	84	$C_{10}H_{11}NS_2$
9	C_5H_9NOS	85	$C_{10}H_{13}NOS_2$
11	$C_3H_6N_2S$	86	CH_2S_3
12	$C_7H_{15}NS$	87	$C_5H_{10}BrNS_2$
13	$C_5H_9NS_2$	88	$C_3H_8O_3S_3$
17	$C_8H_{19}NS$	90	$C_6H_{15}NS$
31	$C_{10}H_9NO_2S$	93	$C_{20}H_{44}N_2S_2$
32	$C_4H_9NS_2$	111	$C_{10}H_{21}NOS$
35	C_7H_7NS	112	$C_6H_{14}N_2S$
36	$C_6H_6N_2S$	118	$C_6H_{15}NO_9S_6$
37	$C_6H_6N_2S$	119	$C_6N_6S_6$
38	$C_6H_6N_2S$	120	$C_4H_5N_3OS_2$
41	C_8H_9NS	121	$C_6H_9N_9S_3$
43	$C_4H_{11}NS$	122	$C_{16}H_{34}N_4S_2$
44	$C_5H_{13}N_3S$	123	$C_7H_{12}N_4S_2$
48	$C_3H_7NS_3$	125	$C_3H_7NO_5S_2$
50	$C_7H_8S_2$	141	$C_5H_{10}S_2$
70	$C_{12}H_{28}N_2S_2$	145	C_2H_5NOS
71	$C_4H_6N_2S_4$	149	$C_{10}H_{23}NS$
79	$C_{16}H_{33}NOS$	154	$C_7H_9N_5S$
80	C_4H_8ClNOS	155	$C_5H_{11}NOS$
81	C_4H_9NOS	156	$CH_4O_2S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
158	$C_{10}H_{13}NOS_2$	195	$C_7H_{13}NO_3S$
159	C_8H_9NOS	196	$C_{11}H_{12}O_3S$
160	$C_5H_8N_2O_2S$	197	$C_7H_{10}N_2O_4S$
161	$C_3H_8N_2OS$	199	$C_7H_{13}NO_6S$
162	$C_7H_{17}NS$	200	$C_7H_{13}NO_5S$
163	$C_6H_{15}NS$	203	$C_6H_{13}NS$
166	C_3H_9NS	205	$C_5H_8N_2OS$
169	$C_5H_{13}NS$	206	C_7H_9NS
174	$C_3H_8S_3$	207	C_7H_9NS
176	$C_7H_{16}N_2S_2$	208	$C_8H_{11}N_3S$
177	$C_6H_{14}N_2S_2$	209	$C_8H_{11}N_3S$
178	$C_5H_{13}NS$	215	$C_4H_{11}N_3S$
179	$C_3H_8N_2O_3S_2$	217	$C_9H_{13}NS$
180	$C_2H_3N_3S_2$	218	$C_{12}H_{27}NS$
181	$C_8H_8N_2S$	221	$C_6H_{13}NOS$
182	$C_3H_9NO_2S_2$	222	$C_{12}H_{27}NS$
183	$C_9H_{12}N_2O_2S$	223	$C_6H_{15}NS$
186	C_3H_9NS	224	$C_6H_{15}NS$
187	$C_8H_{17}NO_5S$	225	$C_{10}H_{23}NS$
189	$C_7H_{13}NO_5S$	226	$C_{10}H_{23}NS$
190	$C_9H_{11}NOS$	227	$C_8H_{17}NS$
191	$C_5H_{12}N_2S_2$	228	$C_{12}H_{27}NS$
192	$C_7H_{13}NO_4S$	229	$C_6H_{15}NS$
193	$C_6H_{11}NO_4S$	230	$C_{10}H_{23}NS$
194	$C_8H_{15}NO_4S$	231	$C_5H_{11}NS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
232	$C_8H_{19}NS$	337	$C_4H_7NS_2$
233	$C_7H_{16}N_2S$	338	$C_4H_8N_2S$
234	$C_8H_{19}NS$	339	$C_4H_{11}NS$
237	$C_3H_4N_2OS_2$	340	$C_7H_{12}O_4S$
245	$C_6H_{11}NS$	341	$C_7H_{14}O_5S$
246	$C_8H_{16}N_2O_2S_2$	342	$C_8H_{20}N_2O_2S_2$
247	$C_{12}H_{20}N_2O_6S_2$	346	$C_3H_8N_2OS$
248	$C_{18}H_{18}N_2S_2$	347	C_2H_7NS
249	$C_9H_{21}NS$	348	$C_3H_7NO_2S$
256	$C_{10}H_{23}NS$	351	$C_{10}H_{17}N_3O_6S$
257	$C_{21}H_{45}NS$	352	$C_4H_{12}N_2S_2$
258	$C_3H_9NO_3S_2$	357	$C_7H_{17}NS$
259	$C_5H_{13}NO_3S_2$	358	$C_9H_{21}NS$
260	$C_9H_{21}N_7S_3$	359	$C_{22}H_{22}N_4O_2S_2$
261	$C_3H_8N_2OS$	361	$C_2H_7NO_3S_2$
298	$C_3H_9N_3S$	362	$C_4H_{11}NO_3S_2$
305	$C_3H_5NS_2$	363	$C_3H_9NO_3S_2$
312	$C_5H_{11}NS_2$	364	$C_4H_{11}NS$
315	$C_{13}H_{19}NS$	375	$C_{20}H_{24}N_2O_2S_2$
316	$C_{12}H_{17}NS$	377	$C_5H_{11}NO_2S$
318	$C_{10}H_{15}NS$	382	$C_8H_{15}NS$
319	$C_6H_{10}N_2O_2S$	383	$C_6H_{10}O_4S_2$
322	$C_9H_{17}NO_7S$	384	$C_2H_6N_2OS$
323	$C_7H_7NS_2$	385	$C_4H_8O_2S$
334	$C_5H_{10}N_2S$	386	$C_3H_8N_2S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
387	$C_3H_4S_3$	563	$C_3H_5NO_3S_2$
388	$C_5H_{11}NS$	571	$C_8H_{14}N_2OS$
389	$C_6H_{11}NS$	572	$C_5H_8N_4S_2$
390	$C_6H_{13}NS_2$	591	$C_6H_4N_2S$
391	$C_{11}H_{10}N_2S$	592	$C_6H_{12}N_2S_4$
392	$C_6H_8N_2S$	594	$C_6H_{12}N_2S_6$
401	$C_8H_{14}N_4S_2$	598	$C_4H_9NOS_2$
415	$C_5H_9NOS_2$	599	$C_{12}H_{16}N_6S_2$
419	$C_4H_9NO_2S$	600	$C_5H_{13}N_3S_2$
424	$C_6H_{13}NO_2S$	601	$C_{12}H_{20}N_2O_2S_4$
464	$C_4H_{10}O_2S_2$	608	C_5H_5NS
454	$C_7H_8O_2S$	609	$C_{16}H_{32}N_2O_{12}S_2$
528	$C_9H_8O_2S$	610	$C_6H_{15}N_3S$
529	$C_4H_9NO_4S$	611	$C_4H_{11}N_3S$
530	$C_3H_6N_2S$	612	$C_6H_{15}N_3S$
531	$C_8H_{14}N_4S_2$	613	$C_6H_{10}N_2O_2S$
532	$C_6H_{12}N_2S$	614	$C_{11}H_9N_3O_2S$
537	$C_8H_{17}NO_5S$	615	$C_9H_{13}NS$
538	$C_6H_{12}N_4S_2$	618	$C_7H_{14}N_2S$
539	$C_3H_8N_2S$	619	$C_{16}H_{23}NO_9S$
540	$C_2H_6N_4S_2$	620	$C_{18}H_{18}N_4S_4$
544	$C_4H_8N_2O_2S_2$	621	$C_5H_{13}NS$
550	$C_4H_{12}N_2Se_2$	622	C_4H_9NOS
551	$C_{11}H_{21}NO_5S$	623	$C_5H_{13}N_3S$
552	$C_7H_{15}NOS$	624	$C_6H_{15}NS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
625	$C_7H_{15}NS$	655	$C_4H_7N_3S$
626	$C_9H_{16}N_4S_2$	656	$C_4H_9N_3OS$
628	$C_{14}H_{14}O_2S_2$	657	$C_9H_{18}N_6O_2S_2$
629	$C_3H_9N_3OS$	658	$C_8H_{17}N_3OS$
630	$C_9H_9NS_2$	659	$C_{10}H_{13}N_3OS$
631	$C_{10}H_{15}NO_3S_2$	660	$C_5H_{11}N_3OS$
632	$C_9H_{20}N_2S$	661	$C_4H_8N_2O_2S$
633	$C_8H_{11}NS$	663	$C_4H_{10}N_2S$
634	$C_{13}H_{20}N_2S$	664	$C_4H_{10}N_2S$
635	$C_{12}H_{19}NS$	665	$C_4H_8N_2S$
636	$C_6H_{13}NS$	666	$C_2H_6N_2S$
637	$C_4H_{11}O_3PS$	667	$C_8H_{17}NO_4S$
638	$C_2H_8NO_3PS$	668	$C_6H_{15}NOS$
639	$C_6H_{16}NO_3PS$	669	$C_2H_3N_3S$
641	$C_6H_{13}N_3S$	670	$C_4H_2N_2O_4S$
642	$C_9H_{10}N_2OS$	672	$C_3H_7NO_2S$
643	$C_6H_{13}N_3S$	673	$C_{10}H_{13}NO_2S$
644	$C_{13}H_{13}N_3O_2S$	674	$C_7H_{17}N_5S_2$
645	$C_{11}H_{11}N_3O_2S$	675	$C_9H_{10}N_2S$
646	$C_7H_{15}N_3S_2$	679	C_3H_9NS
647	$C_5H_{12}N_2OS_2$	680	$C_4H_{11}NS$
648	$C_5H_{13}N_3S$	682	$C_{14}H_{15}N_3O_2S$
649	$C_{10}H_{20}N_6S_2$	683	$C_{12}H_{13}N_3O_2S$
650	$C_{10}H_{18}N_4S_4$	684	$C_8H_{15}NOS_3$
651	$C_5H_{13}NS$	685	$C_4H_6S_3$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
686	$C_{16}H_{28}N_2O_2S_6$	734	$C_8H_{17}NS$
689	$C_6H_{15}NO_3S_2$	741	$C_7H_{15}NS$
691	$C_5H_{13}NS$	746	$C_6H_9N_3S$
692	$C_{16}H_{32}N_2S_2$	747	$C_6H_{14}O_4S_4$
693	$C_{18}H_{25}NO_{11}S$	748	$C_8H_{10}N_2S$
694	$C_5H_{10}N_2OS$	749	$C_8H_{12}N_2S$
695	$C_{10}H_{11}NO_3S$	750	$C_{10}H_9NS$
696	$C_{11}H_{13}NO_3S$	751	$C_{10}H_{20}N_2S_6$
697	$C_6H_{15}NS_2$	753	$C_{14}H_{24}N_2O_2S_6$
698	$C_4H_{11}NOS$	754	$C_{16}H_{18}N_4S_2$
699	$C_6H_{15}NOS$	755	$C_{16}H_{22}N_4S_2$
700	$C_8H_{19}N_3S$	757	$C_4H_{11}N_3S$
701	$CH_4N_2S_2$	760	$C_6H_{16}N_2S$
702	$C_{20}H_{20}N_2O_4S_2$	761	$C_{16}H_{19}NO_4S_2$
703	$C_{20}H_{20}N_2O_6S_2$	762	$C_{16}H_{19}NO_4S_2$
704	$C_{14}H_{21}NO_8S$	763	$C_6H_{13}NS$
707	$C_6H_5N_3S$	764	$C_{12}H_{22}N_2S_3$
709	$C_3H_2N_2O_2S$	766	C_2H_5NOS
710	$C_3H_3N_3O_2S$	767	$C_5H_{12}N_2S$
727	$C_5H_{13}NOS$	769	$C_8H_{11}NO_3S_2$
728	$C_4H_{12}N_2O_2S_2$	770	$C_{12}H_{17}NS$
729	$C_6H_{15}N_5S_2$	774	$C_6H_9N_3S$
730	$C_6H_8N_2OS$	776	$C_{10}H_{10}N_2S_3$
731	$C_3H_3N_3OS$	777	$C_{12}H_{15}NOS$
732	$C_9H_8N_4O_3S_2$	778	$C_8H_{20}N_2S$

<u>WR NO.</u>	<u>Molecular Formula</u>	<u>WR NO.</u>	<u>Molecular Formula</u>
779	$C_8H_{17}NS$	810	$C_{13}H_{15}N_3O_2S$
780	$C_4H_{11}NS$	811	$C_{18}H_{23}NS_2$
781	$C_8H_{19}NS$	812	$C_8H_{15}NO_4S$
782	$C_{10}H_{21}NOS$	813	$C_6H_{13}NS$
783	$C_4H_9N_3S_3$	814	$C_4H_{11}NS$
784	$C_7H_9N_3S$	815	$C_{12}H_{10}ClNO_3S$
785	$C_{10}H_{15}NS$	816	$C_{12}H_{11}NO_3S$
786	$C_{10}H_{14}ClNS$	817	$C_{13}H_{13}NO_3S$
787	$C_{16}H_{20}N_2S$	821	$C_{11}H_{15}NOS_2$
788	$C_7H_{12}N_2S$	822	$C_{16}H_{14}O_6S_2$
789	C_3H_7NOS	823	$C_{10}H_{20}N_2O_2S_4$
790	$C_{11}H_{14}N_2S_3$	826	$C_7H_{12}N_2S$
791	$C_{20}H_{24}N_2S_4$	827	$C_5H_{13}NS$
792	$C_{10}H_{15}NS_2$	828	$C_{10}H_{15}NS$
794	C_6H_7NS	829	$C_6H_{15}NO_2S$
795	$C_7H_9N_3S$	830	$C_8H_{17}NOS$
796	$C_8H_{17}N_3S$	831	$C_9H_{21}NO_2S$
797	$C_9H_{11}NS_2$	834	$C_{12}H_{13}NS$
799	$C_6H_{10}N_2S$	835	$C_{12}H_{13}NS$
800	$C_8H_{16}N_2O_4S_2$	836	$C_{13}H_{11}N_3S$
802	$C_6H_{15}NO_3S_2$	837	$C_{13}H_{11}N_3S$
806	$C_9H_{13}NSe$	839	$C_5H_{10}N_2S$
807	$C_{10}H_{13}NO_2Se$	840	$C_7H_{12}N_2S$
808	$C_{12}H_{15}NO_3Se$	841	$C_7H_{14}N_2S$
809	$C_{12}H_{16}N_6O_4S_2$	842	$C_9H_{20}N_2S$

<u>WR NO.</u>	<u>Molecular Formula</u>	<u>WR NO.</u>	<u>Molecular Formula</u>
843	$C_6H_{15}NOS$	880	$C_5H_{13}NOS$
847	$C_8H_{19}NS$	881	$C_{11}H_{17}NOS$
848	$C_3H_8N_2S_2$	882	$C_9H_{17}NOS$
849	$C_5H_{10}N_2S_2$	883	$C_8H_{17}NS$
850	$C_{14}H_{26}N_4O_2S_2$	884	$C_4H_{12}N_2S$
853	$C_4H_5N_3O_2S$	885	$C_6H_{15}NOS$
854	$C_3H_4N_4OS$	886	$C_6H_{15}NS$
855	$C_{18}H_{14}N_4S_2$	887	$C_9H_{19}NS$
856	$C_9H_{19}NS$	888	$C_5H_{13}NOS$
857	$C_8H_{20}N_2S$	889	$C_4H_{11}NS$
858	$C_5H_{14}N_2S$	892	$C_8H_{17}NO_3S_2$
860	$C_4H_4N_2O_2S$	894	$C_{10}H_{19}NOS$
861	$C_{16}H_{10}N_2O_2S$	895	$C_6H_{15}NO_2S$
862	$C_4H_5N_5OS_2$	896	$C_{11}H_{18}N_2O_3S_2$
864	$C_4H_8N_2O_4S_2$	897	$C_7H_{12}OS$
865	C_3H_7NOS	898	$C_9H_{14}O_3S$
866	$C_6H_{13}NO_4S$	900	$C_{10}H_{12}O_2S$
870	$C_9H_{12}O_2S$	901	C_4H_6OS
871	$C_{11}H_9ClN_2S$	910	$C_8H_{15}N_5S_2$
874	$C_6H_{15}NO_3S_2$	912	$C_{10}H_8S_3$
875	$C_5H_9N_3OS_2$	914	$C_8H_{19}NOS$
876	$C_9H_{19}NS_2$	915	$C_7H_{18}N_2S$
877	$C_7H_{15}NO_4S$	916	$C_5H_{13}NOS$
878	$C_8H_{19}NOS$	917	$C_9H_{21}NS_3$
879	$C_{12}H_{19}NOS$	921	$C_7H_{17}NO_2S$

<u>WR NO.</u>	<u>Molecular Formula</u>	<u>WR NO.</u>	<u>Molecular Formula</u>
922	$C_9H_{20}N_2OS$	985	$C_4H_9NO_2S$
923	$C_{10}H_{12}N_2O_3S_2$	986	$C_4H_6N_2O_4S$
924	$C_6H_{15}NS_2$	987	$C_2H_4N_2O_5S$
927	$C_9H_{13}NS_2$	988	$C_4H_4N_2OS$
928	$C_7H_9NS_2$	989	$C_{11}H_{14}N_2S$
929	$C_5H_{10}N_2S$	990	$C_6H_{13}NS$
931	$C_7H_{11}NS_2$	991	$C_{16}H_{13}NS$
932	$C_{10}H_{20}N_2S_2$	993	C_4H_9NOS
934	$C_9H_{10}N_2S_2$	994	$C_5H_{11}NS$
935	$C_{12}H_{18}N_2S_2$	996	$C_7H_9NO_3S_2$
936	$C_7H_{16}N_2S_2$	997	$C_8H_{11}NS$
937	$C_8H_{13}NS_2$	998	$C_8H_{11}NOS$
940	$C_6H_{10}N_4S_2$	999	$C_8H_{11}NS$
941	$C_5H_{13}N_3S_2$	1000	$C_8H_{11}NOS$
956	$C_8H_{17}NOS$	1001	C_7H_9NOS
957	$C_5H_{14}N_2S$	1002	$C_{11}H_{12}N_2S_2$
958	$C_9H_{22}N_2S$	1032	$C_9H_{19}NO_5S$
959	$C_8H_{19}NO_3S_2$	1033	$C_5H_{13}NO_3S_2$
960	$C_8H_{19}NO_3S_2$	1036	$C_4H_{11}NO_3S_2$
962	C_3H_7NOS	1039	$C_9H_{17}NO_5S_2$
977	$C_9H_{17}NO_7S$	1040	$C_7H_{18}N_2S$
978	$C_8H_{15}NO_6S$	1042	$C_3H_8N_2OS$
982	$C_5H_{13}NO_3S_2$	1043	$C_6H_{15}NOS$
983	$C_6H_{13}NO_4S_2$	1044	$C_4H_7NS_2$
984	$C_4H_{11}NS$	1045	$C_9H_{22}N_2S$

<u>WR NO.</u>	<u>Molecular Formula</u>	<u>WR NO.</u>	<u>Molecular Formula</u>
1046	$C_8H_{11}NS$	1075	$C_8H_{14}O_4S$
1047	$C_9H_{13}NO_3S_2$	1076	$C_5H_{11}NO_2S$
1048	$C_9H_{13}NS$	1077	$C_8H_{14}O_2S$
1050	$C_8H_{11}NO_3S_2$	1079	$C_7H_{18}N_2OS$
1051	$C_{11}H_{12}N_2OS$	1080	$C_5H_4N_4S_2$
1052	$C_4H_7NS_2$	1081	$C_6H_{15}NO_3S_2$
1053	$C_9H_{19}NS$	1082	$C_7H_{15}NO_3S_2$
1054	$C_6H_{15}NS$	1083	$C_{10}H_{12}N_2S$
1055	$C_9H_6S_3$	1084	$C_6H_{13}NO_4S_2$
1056	$C_6H_{15}NOS$	1085	$C_6H_{13}NO_3S_2$
1057	$C_{11}H_{26}N_2S$	1086	$C_5H_{13}NO_3S_2$
1058	$C_{11}H_{21}NOS$	1087	$C_3H_9N_3O_3S_2$
1059	$C_7H_{10}N_2O_2S$	1088	$C_4H_6N_2S$
1060	$C_7H_{10}N_2OS$	1089	$C_6H_{16}N_6S_2$
1062	$C_{11}H_{21}NO_3S$	1090	$C_5H_{13}NO_3S_2$
1063	$C_9H_{22}N_2S$	1091	$C_2H_6N_2S$
1064	$C_7H_{17}NOS$	1093	$C_7H_{17}NO_3S_2$
1065	$C_5H_{14}N_2S$	1094	$C_5H_{13}NO_3S_2$
1066	$C_6H_{16}N_2S$	1095	$C_4H_{11}NO_3S_2$
1067	$C_6H_{15}NOS$	1096	$C_7H_{17}NOS$
1068	$C_6H_{11}NS$	1097	$C_{16}H_{27}N_3O_3S_2$
1069	$C_6H_{11}NS$	1098	$C_8H_{17}NO_3S_2$
1070	$C_5H_{11}N_3S_2$	1099	$C_5H_{13}NO_3S_2$
1072	$C_{10}H_{19}NS$	1100	$C_7H_{17}NO_3S_2$
1074	$C_{10}H_{16}O_5S$	1101	$C_7H_{17}NO_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
1103	$C_8H_{19}NOS$	1129	$C_{44}H_{40}N_6S_2$
1104	$C_6H_{15}NOS$	1130	$C_7H_{15}NS$
1105	$C_4H_{11}NO_6S_4$	1131	$C_{14}H_{21}NO_8S$
1106	$C_8H_{11}N_3O_3S$	1140	$C_9H_{20}N_2OS$
1108	$C_5H_6N_2O_2S_2$	1143	$C_8H_{10}N_2OS$
1109	$C_6H_9NS_2$	1144	$C_7H_{17}NO_3S_2$
1110	$C_7H_{15}NO_3S_2$	1145	$C_4H_{11}N_3O_3S_2$
1111	$C_8H_{14}N_2S$	1146	$C_4H_6N_2O_3S_3$
1112	$C_9H_{13}NO_3S_2$	1147	$C_6H_{12}N_4S_2$
1113	$C_9H_{17}NOS$	1148	$C_6H_{12}N_2O_2S$
1114	$C_{14}H_{28}N_2S_2$	1149	$C_{12}H_{22}N_2C_3S_2$
1115	$C_6H_{14}N_4O_4S_2$	1150	$C_6H_{15}NO_3S_2$
1116	$C_6H_{11}NS$	1151	$C_6H_{16}N_2O_2S_2$
1117	$C_{10}H_{19}NS$	1152	$C_3H_9NO_3S$
1118	$C_5H_9NO_5S_2$	1153	$C_6H_{12}N_2OS$
1119	$C_5H_{13}NOS$	1154	$C_5H_{10}N_2O_2S$
1120	$C_5H_{13}NO_2S$	1155	$C_7H_{13}NO_3S$
1121	$C_8H_{17}NOS$	1156	$C_{11}H_9N_3S$
1122	$C_8H_{19}NO_2S$	1157	$C_6H_{12}N_2O_2S$
1123	$C_9H_{22}N_2OS$	1158	$C_8H_{14}N_2S$
1124	$C_{10}H_{23}NO_2S$	1163	$C_2H_4N_4O_2S$
1125	$C_7H_{14}N_2OS$	1164	$C_4H_8N_2O_2S$
1126	$C_7H_{14}N_2S$	1165	$C_5H_{11}N_3S$
1127	$C_{13}H_{17}N_3O_3S$	1166	$C_6H_{12}N_2O_2S_2$
1128	$C_8H_{16}N_2S_2$	1167	$C_{16}H_{16}N_2OS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
1168	$C_8H_{24}Cl_2N_4Ni_3S_4$	1245	$C_{10}H_{15}NOS$
1169	$C_8H_{24}Br_2N_4Ni_3S_4$	1247	$C_5H_{13}NO_6S_4$
1170	$C_6H_{18}CoN_3S_3$	1248	$C_7H_{14}N_4S_2$
1172	$C_9H_{13}NO_3S_2$	1249	$C_5H_{13}N_3S$
1173	$C_8H_{11}NO_3S_2$	1250	$C_{10}H_{23}NO_3S_2$
1174	$C_{11}H_{12}N_2O_6S_4$	1251	$C_4H_{11}N_3S$
1175	$C_{16}H_{22}N_4S$	1252	$C_{16}H_{27}NO_3S_2$
1176	$C_{12}H_{19}NO_3S_2$	1253	$C_{13}H_{19}NO_3S_2$
1177	$C_{12}H_{19}NS$	1254	$C_{14}H_{17}NO_3S_2$
1178	$C_{16}H_{27}NS$	1255	$C_{14}H_{21}NO_3S_2$
1179	$C_{14}H_{21}NS$	1256	$C_{10}H_{15}NO_3S_2$
1182	$C_{12}H_{19}NS$	1257	$C_{12}H_{19}NO_3S_2$
1183	$C_{15}H_{17}NS$	1258	$C_{11}H_{17}NO_5S_2$
1184	$C_{10}H_{15}NS$	1259	C_5H_5NOS
1185	$C_{13}H_{19}NS$	1260	$C_6H_7N_3OS$
1186	$C_5H_{13}N_3O_3S_2$	1261	$C_9H_{19}NO_5S$
1187	$C_4H_5NO_2S$	1262	$C_7H_{13}NOS$
1188	$C_7H_{15}NOS$	1263	$C_7H_{13}NOS$
1189	$C_{19}H_{37}N_3O_2S$	1264	$C_{10}H_{18}N_2O_2S$
1190	$C_{10}H_{23}NOS$	1265	$C_5H_{13}NS_2$
1191	$C_6H_{15}NOS$	1279	$C_8H_{24}Cl_2CuN_4Ni_2S_4$
1192	$C_{20}H_{24}N_2O_3S$	1280	$C_8H_{24}Cd_2Cl_4N_4Ni_2S_4$
1224	$C_2H_6N_4S$	1282	$C_8H_{24}Cl_2Co_3N_4S_4$
1231	$C_9H_{10}N_2O_2S$	1283	$C_8H_{24}ClCuN_4Ni_2S_4$
1244	$C_7H_{15}NOS$	1284	$C_{12}H_{36}Br_2Co_2N_6NiS_6$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
1285	$C_{12}H_{36}Br_3Co_3N_6S_6$	1453	$C_6H_{15}N_3O_3S_2$
1290	$C_4H_{11}N_3O_3S_2$	1455	C_5H_9NS
1291	$C_5H_{13}N_3O_3S_2$	1457	$C_{17}H_{17}N_3OS$
1292	$C_6H_{10}N_2O_2S$	1458	$C_6H_{13}N_3O_3S_2$
1317	$C_5H_8N_2O_2S$	1459	$C_6H_9NOS_2$
1366	$C_{18}H_{20}N_2O_3S$	1460	$C_6H_{15}N_3S$
1424	$C_{10}H_{21}NS$	1461	$C_6H_{15}NS$
1426	$C_5H_{13}NS$	1462	$C_8H_{19}NS$
1427	$C_8H_{16}N_6O_4S_2$	1463	$C_{10}H_{24}N_2O_2S_2$
1428	$C_4H_9N_3O_2S$	1464	$C_7H_{16}N_2S_4$
1430	$C_8H_{24}Cl_2N_4S_2$	1465	$C_{12}H_{20}N_2O_4S_2$
1431	C_3H_7NOS	1466	$C_6H_{13}NS_3$
1432	$C_3H_6OS_2$	1468	$C_7H_{13}N_3OS$
1434	$C_5H_{11}NO_3S_2$	1469	$C_6H_{17}BrN_4S$
1435	$C_6H_{15}NOS_2$	1470	$C_{10}H_{15}NO_3S_2$
1436	$C_8H_{19}NOS_2$	1471	$C_8H_{19}NO_3S_2$
1438	$C_{17}H_{25}NO_9S_2$	1472	$C_{11}H_{25}NO_3S_2$
1440	C_5H_9NOS	1473	$C_{13}H_{29}NO_3S_2$
1443	$C_8H_{15}NOS$	1476	$C_3H_8N_2S_2$
1445	$C_6H_{11}NOS$	1477	$C_5H_{11}N_3S_3$
1446	$C_9H_{13}NO_3S_2$	1479	$C_5H_{11}N_3S_3$
1447	$C_6H_{15}NO_2S_2$	1480	$C_{11}H_{18}N_2O_2S$
1450	$C_4H_5NOS_2$	1481	$C_7H_{11}NO_2S$
1451	$C_4H_{11}N_3O_3S_2$	1482	$C_{13}H_{24}N_2O_2S_2$
1452	$C_5H_{13}N_3S$	1483	$C_8H_{20}N_2O_4S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
1484	$C_3H_9NO_3S_2$	1522	$C_9H_{21}NS$
1485	$C_5H_{14}N_4S_2$	1526	$C_4H_9NO_3S_2$
1486	C_6H_7NOS	1527	$C_8H_{16}N_2O_4S_2$
1487	C_6H_7NOS	1528	$C_{10}H_{11}N_3O_3S_2$
1488	$C_4H_{11}NO_3S_2$	1529	$C_{10}H_{10}N_2S$
1489	$C_5H_{12}N_2S$	1530	$C_9H_{12}N_2O_3S_2$
1490	$C_4H_{12}NO_3PS$	1531	$C_4H_{10}N_2O_3S_2$
1491	$C_7H_8N_4S_2$	1532	$C_3H_8N_2OS$
1492	$C_9H_{14}N_2O_3S_2$	1533	$C_7H_{13}NO_2S_2$
1493	$C_{12}H_{14}N_2O_3S_2$	1534	$C_{11}H_{13}NO_3S_2$
1494	$C_3H_9N_3S$	1535	C_3H_7NOS
1495	$C_6H_{15}NS$	1536	C_4H_9NOS
1496	$C_6H_{15}NS$	1537	$C_5H_{11}NOS$
1500	$C_9H_{19}NO_2S_4$	1538	$C_7H_{11}NO_2S$
1504	$C_9H_{15}NS_2$	1539	$C_4H_9N_3OS$
1505	$C_{13}H_{25}NS_2$	1540	$C_9H_{17}NO_4S$
1506	$C_{10}H_{13}NOS$	1546	$C_4H_6N_2O_2S_2$
1507	$C_{10}H_{23}NS$	1547	$C_{11}H_{25}NS$
1512	$C_6H_{15}NS$	1548	$C_9H_{21}NS$
1513	$C_9H_{17}NS$	1549	$C_{13}H_{29}NS$
1514	$C_{11}H_{25}NS$	1550	$C_3H_9N_3OS$
1518	$C_{12}H_{27}NS$	1551	$C_2H_6N_2O_3S_2$
1519	$C_7H_{17}NS$	1552	$C_3H_8N_2O_3S_2$
1520	$C_{11}H_{25}NOS$	1553	$C_4H_{11}NS$
1521	$C_{12}H_{27}NS$	1554	$C_5H_{13}NS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
1555	$C_6H_8N_2OS$	1608	$C_4H_{11}N_3O_3S_2$
1556	$C_{12}H_{12}N_2S$	1609	$C_5H_{11}NOS$
1557	$C_7H_{10}N_2OS$	1610	$C_8H_{16}N_2O_2S_2$
1558	$C_{11}H_{11}NO_2S_2$	1611	$C_8H_{16}N_2O_4S_2$
1562	$C_8H_{20}N_2S$	1612	$C_6H_{13}NO_2S$
1563	$C_4H_{10}N_4O_2S$	1613	$C_6H_{10}O_2S_2$
1564	$C_6H_{12}N_2O_2S_2$	1614	$C_5H_{13}NS_2$
1565	$C_{14}H_{31}NS$	1615	$C_{18}H_{39}NS$
1566	$C_{14}H_{31}NS_2$	1616	$C_6H_{15}NO_3S$
1567	$C_9H_{15}NO_4S$	1617	$C_8H_{18}N_2OS$
1568	$C_6H_{15}NS$	1618	$C_{10}H_{23}NO_3S_2$
1569	$C_7H_{17}NS$	1620	$C_7H_{15}NO_4S$
1570	$C_4H_{11}NO_3S_2$	1621	$C_4H_{11}NS_2$
1574	$C_3H_9N_3S$	1622	$C_5H_{13}N_3O_3S_2$
1575	$C_{15}H_{23}N_3O_8S$	1623	$C_3H_9NO_4S_2$
1576	$C_7H_{12}N_2O_2S$	1661	$C_6H_{15}NO_3S_2$
1577	$C_8H_{12}N_2OS$	1662	$C_6H_{15}NO_3S_2$
1599	$C_7H_{10}N_2O_2S$	1663	$C_6H_{15}NO_3S_2$
1600	$C_9H_{13}N_3OS$	1670	$C_{11}H_{13}NO_3S_2$
1601	$C_{10}H_{15}N_3OS$	1679	$C_7H_{12}N_2O_2S$
1602	$C_5H_4N_4S_2$	1680	$C_{10}H_{22}N_2S$
1604	$C_{11}H_{25}N_3S$	1681	$C_{10}H_{23}NS$
1605	$C_{11}H_{25}N_3S$	1682	$C_9H_{23}N_3S$
1606	$C_{10}H_{23}NO_3S_2$	1683	$C_5H_{13}NS$
1607	$C_{12}H_{27}NO_3S_2$	1684	$C_5H_{11}NOS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
1685	$C_5H_9NO_2S_2$	1723	$C_4H_{11}NO_4S$
1686	$C_7H_{13}NO_2S_2$	1724	$C_4H_{10}N_4S$
1687	$C_{10}H_{22}N_2O_3S_2$	1725	$C_6H_{13}NO_3S_2$
1692	$C_{10}H_{24}N_2S$	1726	$C_5H_{13}NS$
1693	$C_5H_{11}NOS_2$	1727	$C_6H_{16}N_2S$
1694	$C_{19}H_{23}N_5O_{11}S$	1728	$C_6H_{16}N_2S_2$
1695	$C_4H_{11}NS_2$	1729	$C_7H_{18}N_2S$
1696	$C_9H_{21}NS$	1730	$C_9H_{22}N_2S$
1697	$C_6H_{14}N_2O_3S_2$	1731	$C_{11}H_{26}N_2S$
1698	$C_6H_{14}NPS_2$	1732	$C_{12}H_{28}N_2S$
1699	$C_4H_{10}NOPS_2$	1733	$C_9H_{19}NS$
1700	$C_8H_{22}N_3PS_3$	1734	$C_8H_{17}NO_3S_2$
1701	$C_4H_{11}N_3Se$	1744	$C_7H_{15}N_3S$
1702	$C_5H_{13}N_3Se$	1745	$C_6H_{13}N_3S$
1703	$C_4H_{11}N_3Se$	1746	$C_6H_8ClN_3O_3S_2$
1704	$C_3H_9N_3Se$	1747	$C_{10}H_{11}N_3O_3S_2$
1710	$C_{18}H_{39}NS$	1748	$C_6H_8N_2S$
1711	$C_{20}H_{43}NS$	1749	$C_{12}H_{22}N_2C_2S$
1714	$C_{11}H_{21}NO_5S$	1750	$C_6H_{14}N_2O_3S_2$
1715	$C_7H_{11}NOS_2$	1751	$C_6H_{16}N_2OS$
1716	$C_8H_{15}NO_2S_2$	1752	$C_8H_{16}N_2O_2S_2$
1717	$C_8H_{13}NOS_2$	1754	$C_{17}H_{37}NOS$
1718	$C_{10}H_{19}NO_2S_2$	1755	$C_{13}H_{30}N_2S$
1719	$C_{10}H_{17}NOS_2$	1756	$C_9H_{12}N_2O_3S_2$
1722	$C_{12}H_{16}N_2OS$	1757	$C_3H_8N_2O_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
1758	$C_4H_{10}N_2O_3S_2$	1807	$C_8H_{12}N_2O_3S_2$
1759	$C_5H_{11}NOS$	1808	$C_6H_{13}NOS$
1761	$C_2H_6N_4S_2$	1809	$C_5H_9NS_2$
1762	$C_6H_7N_3S_2$	1810	$C_5H_{11}NO_3S_3$
1763	$C_7H_{15}N_3S_3$	1811	$C_5H_{12}N_2O_3S_2$
1764	$C_{16}H_{29}N_3S_3$	1812	$C_8H_{10}N_4S$
1765	$C_9H_{12}N_2S_2$	1814	$C_{10}H_{24}N_3PS_3$
1766	$C_{10}H_{14}N_4S_2$	1815	$C_4H_{10}NPS_2$
1777	$C_{18}H_{32}N_6O_2S_2$	1816	$C_6H_{18}N_3PS_3$
1780	$C_6H_{15}NOS$	1817	$C_{12}H_{30}N_3PS_3$
1781	$C_{10}H_{23}NOS$	1818	$C_{11}H_{25}NO_3S_2$
1782	$C_7H_{15}NO_2S$	1819	$C_6H_{15}NS$
1783	$C_5H_{14}N_2OS$	1821	$C_8H_{21}N_3S$
1784	$C_8H_{15}NO_2S$	1823	$C_9H_{19}NO_5S$
1785	$C_9H_{18}N_2S$	1824	$C_{11}H_{16}N_2S_2$
1787	$C_{10}H_{24}N_2OS$	1826	$C_5H_{11}NS$
1788	$C_6H_{15}NO_2S$	1827	$C_9H_{15}NO_2S$
1789	$C_{10}H_{21}NOS$	1828	$C_{12}H_{17}NS$
1791	$C_7H_{17}NOS$	1829	$C_7H_{10}N_2S$
1792	$C_{10}H_{15}NS$	1830	$C_8H_{12}N_2S$
1800	$C_6H_{11}N_3O_3S_2$	1831	$C_7H_8N_2OS$
1803	$C_6H_{11}NO_3S_2$	1832	$C_8H_{10}N_2OS$
1804	$C_{12}H_{19}NS$	1833	$C_{14}H_{14}N_4O_2S_2$
1805	$C_{12}H_{21}N_3S$	1834	$C_7H_{10}N_2OS$
1806	$C_8H_{20}N_{10}S_2$	1835	$C_{11}H_{25}N_3S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
1836	$C_{18}H_{30}N_4S_2$	1888	$C_5H_9NO_2S_2$
1837	$C_{12}H_{21}NOS$	1889	$C_5H_7NOS_2$
1838	$C_7H_{15}NOS$	1890	$C_8H_{15}NO_3S$
1839	$C_5H_8Cl_2N_2S$	1891	$C_8H_{11}NS$
1867	$C_{10}H_{14}N_2O_3S_2$	1892	$C_{12}H_{28}N_2O_3S$
1868	$C_4H_{10}N_2O_3S_2$	1893	$C_{14}H_{32}N_2S$
1869	$C_{13}H_{20}N_2O_3S_2$	1894	$C_{12}H_{28}N_2S_2$
1870	$C_4H_{12}N_4S$	1895	$C_{12}H_{27}NOS$
1871	$C_{11}H_{15}NO_3S_2$	1896	$C_{20}H_{16}N_4O_4S$
1872	$C_{10}H_{17}N_3S_3$	1897	$C_{10}H_{13}NO_4S_2$
1873	$C_{10}H_{21}N_3S_3$	1898	$C_{14}H_{31}NOS$
1874	$C_{16}H_{17}N_3O_2S$	1900	$C_{13}H_{21}N_3O_7S$
1875	$C_{10}H_{20}N_2PtS_4$	1901	$C_7H_{18}N_2OS_2$
1876	$C_{10}H_{24}N_2S_4$	1902	$C_9H_{12}N_2OS$
1877	$C_{10}H_{24}N_2S_2$	1903	$C_5H_{13}NO_3S_2$
1878	$C_2H_7NO_3SSe$	1904	$C_5H_{13}NO_3S_2$
1879	$C_{10}H_{20}N_2S_4Zn_2$	1905	$C_{13}H_{17}N_3O_3S_2$
1880	$C_{16}H_{36}Cl_2N_4Pd_3S_4$	1910	$C_{17}H_{36}O_2S_2$
1881	$C_{10}H_{22}N_2S_4Zn$	1911	$C_{14}H_{30}O_2S_2$
1882	$C_{10}H_{22}N_2PdS_4$	1912	$C_{15}H_{32}O_2S_2$
1883	$C_{12}H_{25}N_3S_3$	1913	$C_{12}H_{24}O_4S_2$
1884	$C_{12}H_{25}N_3O_2S$	1914	$C_{21}H_{32}N_2S$
1885	$C_{12}H_{21}N_3O_6S$	1915	$C_{20}H_{30}S$
1886	$C_9H_{11}NO_2S_2$	1916	$C_6H_{13}NOS$
1887	$C_6H_{10}N_2O_2^c$	1917	$C_6H_{14}O_2S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
1923	$C_7H_6N_2S_2$	1973	$C_{10}H_{26}N_3PS_3$
1937	$C_5H_{11}NS_2$	1974	$C_4H_7NO_3S_2$
1938	$C_6H_{12}N_2O_2S_2$	1986	$C_3H_9NO_4S_2$
1939	$C_4H_{10}N_2OS$	1987	$C_7H_{15}NS$
1940	$C_{12}H_{24}N_2O_6S_4$	1988	$C_4H_{11}N_3OS$
1941	$C_{14}H_{31}NS$	1989	$C_4H_{10}N_2S$
1942	$C_6H_{15}NS$	1990	$C_5H_{11}N_2S$
1956	$C_{18}H_{22}N_4O_2S_2$	1991	$C_9H_{13}NO_4S_2$
1957	$C_7H_{14}N_2O_3S$	1992	$C_{11}H_{17}NO_2S$
1958	$C_4H_{11}N_3O_3S_2$	1993	$C_{12}H_{19}NOS$
1959	$C_{10}H_{20}N_2O_2S_4$	1994	$C_{16}H_{19}NS$
1960	$C_5H_{11}NS_2$	1995	$C_{12}H_{19}NO_4S_2$
1961	$C_5H_{14}NO_3PS$	1996	$C_4H_{11}NOS$
1962	$C_4H_{10}N_2S_4$	1997	$C_6H_{14}N_2OS$
1963	$C_3H_8N_2S_2$	1998	$C_{14}H_{26}N_4O_6S_2$
1964	$C_3H_8N_2S_2$	1999	$C_6H_{14}N_2OS$
1965	$C_{14}H_{31}NO_3S_2$	2000	$C_{15}H_{29}N_3S$
1966	$C_{22}H_{22}N_2S$	2002	$C_8H_{17}NS$
1967	$C_8H_{20}N_2O_2S_2$	2003	$C_7H_{17}NO_2S$
1968	$C_{11}H_{13}NO_3S_2$	2004	$C_7H_{17}NS$
1969	$C_6H_{13}NO_3S$	2005	$C_{12}H_{24}N_2O_6S$
1970	$C_8H_{16}N_2O_2S_2$	2006	$C_{12}H_{24}N_2O_6S$
1971	$C_6H_{13}N_2OPS_2$	2007	$C_{13}H_{29}NO_3S_2$
1972	$C_8H_{20}N_3OPS_3$	2008	$C_5H_{13}NO_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2009	$C_{19}H_{27}N_3O_{10}S$	2039	$C_7H_{16}N_2OS$
2012	$C_{16}H_{24}N_2O_4S$	2043	$C_{10}H_{19}NO_7S$
2013	$C_8H_{13}NOS_2$	2044	$C_{10}H_{19}NO_7S$
2014	$C_8H_{13}NOS$	2045	$C_{10}H_{19}NO_7S$
2015	$C_{14}H_{22}N_2O_2S$	2046	$C_{17}H_{37}NOS$
2017	C_3H_5NOS	2047	$C_{19}H_{41}NS$
2018	$C_7H_{13}NO_2S$	2048	$C_4H_9NS_3$
2019	$C_4H_9NO_5S_3$	2049	$C_7H_{14}N_2O_3S_2$
2020	$C_6H_{10}N_2O_2S_2$	2050	$C_5H_{12}N_2O_3S_2$
2021	$C_5H_{13}N_5S$	2051	$C_6H_{11}NO_2S_3$
2022	$C_4H_{11}N_3S$	2052	$C_6H_{11}N_3S$
2024	$C_7H_{15}NOS$	2058	$C_6H_{13}NS$
2025	$C_7H_{15}NOS$	2059	$C_{15}H_{33}NS$
2026	$C_{12}H_{27}NS$	2060	$C_{14}H_{30}N_2O_3S_2$
2027	$C_4H_{10}N_2OS$	2061	$C_5H_{12}N_2O_3S_2$
2028	$C_3H_8N_2OS$	2062	$C_5H_9NO_3S$
2031	$C_3H_4O_2S$	2063	$C_6H_{11}NO_3S$
2032	$C_4H_6O_3S$	2064	$C_7H_{13}NO_3S$
2033	$C_5H_{10}O_3S$	2065	$C_7H_{11}NO_2S$
2034	$C_6H_{12}O_4S$	2066	$C_{10}H_{19}NO_3S$
2035	$C_5H_{10}O_3S$	2067	$C_{10}H_{17}NO_4S$
2036	$C_{12}H_{13}NS$	2068	$C_{10}H_{17}NO_2S$
2037	$C_{10}H_{20}N_2S_2$	2069	$C_{11}H_{13}NO_4S$
2038	$C_8H_{16}N_2O_2S$	2070	$C_8H_{14}N_2S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2072	$C_5H_8N_2O_2S_2$	2096	$C_7H_{16}N_2O_3S_2$
2073	$C_{11}H_{23}NOS$	2097	$C_8H_{16}N_2O_3S$
2074	$C_{10}H_{18}N_4O_6S_2$	2098	$C_{13}H_{22}NO_2PS_2$
2075	$C_{14}H_{30}N_4O_2S_2$	2099	$C_{10}H_{25}NO_4P_2S_3$
2076	$C_5H_{10}N_2O_3S$	2100	$C_8H_{21}N_2O_2PS_2$
2077	$C_{11}H_{25}NO_3S_2$	2101	$C_9H_{22}N_3PS_3$
2078	$C_9H_{21}NO_3S_2$	2102	$C_6H_{14}NOPS_2$
2079	$C_{10}H_{23}NO_3S_2$	2103	$C_{10}H_{20}N_2O_2S_2$
2080	$C_{14}H_{31}NO_3S_2$	2104	$C_{11}H_{22}N_2O_2S_2$
2081	$C_{10}H_9N_3O_2S$	2105	$C_{11}H_{21}NO_2S$
2082	$C_3H_9NS_2$	2106	$C_3H_8N_2S$
2083	$C_4H_{11}N_3S$	2107	$C_6H_{14}N_4S_2$
2084	$C_{17}H_{37}NS$	2108	$C_5H_{13}NO_3S_2$
2085	$C_5H_{13}NO_3S_2$	2109	$C_{15}H_{33}NO_3S_2$
2086	$C_6H_{13}NS$	2110	$C_{13}H_{25}NO_2S$
2087	$C_8H_{15}NO_4S$	2111	$C_{13}H_{29}NO_3S_2$
2088	$C_8H_{17}NS$	2112	$C_5H_{13}NOS$
2089	C_4H_8AgNOS	2113	C_3H_9NS
2090	$C_{11}H_{14}N_2O_2S_2$	2122	$C_4H_{15}NO_3S_2$
2091	$C_7H_{17}NS$	2123	$C_8H_{15}NS$
2092	$C_8H_{13}NO_2S$	2127	$C_5H_{11}NS$
2093	$C_6H_{13}NO_5S_2$	2128	$C_{11}H_{21}NS$
2094	$C_8H_{20}N_2O_4S_4$	2129	$C_5H_8F_3NOS$
2095	$C_{13}H_{27}NO_2S$	2130	$C_7H_{15}NO_3S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2131	$C_8H_{19}NS$	2178	$C_7H_{17}NO_3S_2$
2132	$C_9H_{21}NS$	2179	$C_5H_{13}N_3S$
2133	$C_3H_7NS_2$	2180	$C_3H_8N_2O_4S_2$
2137	$C_8H_{19}NO_3S_2$	2181	$C_{13}H_{22}N_2O_6S_2$
2138	$C_5H_{11}NC_2S$	2182	$C_6H_{13}N_3S_3$
2139	$C_8H_{15}NO_2S_3$	2183	$C_6H_{16}N_6O_2S_2$
2140	$C_6H_{13}NO_3S$	2184	$C_8H_{20}N_2S_4$
2141	$C_6H_{13}NO_3S$	2185	$C_7H_{14}N_2O_3S_4$
2142	$C_{10}H_{14}N_2O_3S_2$	2186	$C_8H_{10}N_2O_3S_2$
2143	$C_5H_{12}N_2O_3S_2$	2187	$C_{10}H_{14}N_2O_3S_2$
2144	$C_9H_{13}NO_4S_2$	2188	$C_{13}H_{26}N_2O_2S_2$
2145	$C_3H_9NO_4S_2$	2189	$C_6H_{16}N_2S_2$
2146	$C_{10}H_{15}NO_4S_2$	2190	$C_8H_{20}N_6S_2$
2147	$C_7H_{11}NO_2S_2$	2191	$C_{14}H_{32}N_6S_2$
2148	$C_7H_{13}NO_3S_2$	2192	$C_{10}H_{24}N_2O_2S_2$
2149	$C_7H_{13}NO_4S$	2193	$C_8H_{17}N_3S_3$
2150	$C_9H_{19}NO_2S$	2194	$C_{28}H_{57}N_3O_2S$
2152	$C_9H_{21}NS$	2196	$C_6H_{17}N_2OPS_3$
2153	$C_7H_{18}N_2OS$	2197	$C_8H_{20}NO_2PS_2$
2154	$C_9H_{21}NS$	2198	$C_{20}H_{29}N_2OPS_3$
2155	$C_5H_{12}N_2OS$	2199	$C_6H_{13}NS$
2157	$C_7H_{13}N_3S_3$	2200	$C_8H_{15}NOS$
2176	$C_6H_{15}NO_3S_2$	2201	$C_{12}H_{28}N_2O_2S_2$
2177	$C_7H_{17}NO_3S_2$	2202	$C_5H_{11}NS_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2203	$C_6H_{15}NS$	2228	$C_{13}H_{27}N_3O_6S_2$
2204	$C_6H_{13}NOS$	2229	$C_{11}H_{17}NO_3S_2$
2205	$C_7H_{17}NS$	2230	$C_9H_{13}NO_3S_2$
2206	$C_7H_{15}NOS$	2231	$C_9H_{21}NO_3S_2$
2207	$C_8H_{17}NS$	2232	$C_{14}H_{16}N_2PdS_2$
2208	$C_8H_{15}NOS$	2234	$C_{13}H_{29}NO_2S$
2209	$C_8H_{20}N_2S_2$	2235	$C_{16}H_{36}N_2S_2$
2210	$C_9H_{16}N_2O_3S_2$	2236	$C_{15}H_{33}NO_3S_2$
2211	$C_9H_{16}N_2O_3S_4$	2237	$C_{14}H_{33}N_3S$
2212	$C_{11}H_{18}N_2O_4S$	2239	$C_{13}H_{30}N_2S_2$
2213	$C_7H_{14}N_2S$	2240	$C_{11}H_{24}N_2OS$
2214	$C_7H_{16}N_2S$	2242	$C_{15}H_{32}N_2OS$
2215	$C_{10}H_{18}N_2O_4S$	2243	$C_7H_{16}N_2S_2$
2216	$C_{11}H_{24}N_2S$	2244	$C_6H_{15}NO_3S_2$
2217	$C_6H_{14}N_2S$	2245	$C_{12}H_{27}NO_3S_2$
2219	$C_{24}H_{52}N_2O_2S_2$	2246	$C_{10}H_{23}NO_3S_2$
2220	$C_{12}H_{28}N_2S$	2247	$C_9H_{21}NS$
2221	$C_{28}H_{32}Cl_2N_4Nl_3O_8S_4$	2248	$C_5H_{13}N_3OS$
2222	$C_{14}H_{16}Cl_2N_2Nl_2S_2$	2249	$C_6H_{15}N_3OS$
2223	$C_{14}H_{16}N_2NlS$	2250	$C_5H_8N_7O_2S_2$
2224	$C_{28}H_{32}N_6Nl_3O_6S_4$	2251	$C_7H_{10}N_2S_2$
2225	$C_3H_9NO_3S$	2252	$C_5H_{13}N_3O_3S_2$
2226	$C_6H_{16}N_2O_2S_2$	2253	$C_{20}H_{30}N_3OPS_2$
2227	$C_8H_{20}N_6S_2$	2254	$C_{27}H_{36}N_3PS_4$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2255	$C_7H_{18}NO_2PS_2$	2280	$C_4H_9NS_2$
2256	$C_{18}H_{25}N_2PS_4$	2281	$C_{16}H_{35}NO_3S_2$
2257	$C_{22}H_{33}N_2PS_3$	2282	$C_6H_{14}N_4S_2$
2258	$C_{54}H_{72}N_9P_3S_6$	2284	$C_7H_{15}NO_2S$
2259	$C_6H_{18}N_3OPS_2$	2285	$C_5H_{12}N_2OS_2$
2260	$C_{12}H_{36}N_9P_3S_6$	2286	$C_7H_{16}N_2OS$
2261	$C_{28}H_{48}N_2S$	2287	$C_6H_{13}NO_2S$
2262	$C_{16}H_{29}N_3O_2S$	2288	$C_2H_6N_2S_2$
2263	$C_{10}H_{13}NOS$	2289	$C_{10}H_{22}N_2S_2$
2264	$C_9H_{18}N_2O_2S_2$	2290	$C_5H_{12}N_2S_2$
2265	$C_{10}H_{19}NO_4S$	2291	$C_6H_{14}N_2S_2$
2266	$C_{10}H_{21}N_3O_2S$	2292	$C_{11}H_{23}NO_2S$
2267	$C_5H_{11}N_3S$	2293	$C_6H_{15}NO_3S_2$
2268	$C_6H_{13}N_3S$	2294	$C_{12}H_{28}NO_3PS$
2269	$C_7H_{13}NS$	2295	$C_5H_{12}N_2O_3S_2$
2270	$C_7H_{11}NS$	2296	$C_9H_{15}NO_2S$
2271	$C_7H_8N_2S_2$	2297	$C_{14}H_{32}NS$
2272	$C_7H_8N_2S_2$	2298	$C_{11}H_{17}NS$
2273	$C_6H_{11}N_3S_3$	2299	$C_{11}H_{17}NS$
2275	$C_6H_9NO_2S_2$	2300	$C_{11}H_{24}N_2S$
2276	$C_5H_{13}N_5S$	2301	$C_{11}H_{25}NS$
2277	$C_6H_{15}NOS$	2302	$C_{12}H_{19}NO_2S$
2278	$C_8H_{16}N_2O_2S_2$	2304	$C_{15}H_{23}NS$
2279	$C_4H_8N_2O_8S_4$	2305	$C_{27}H_{36}N_2O_4S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2306	$C_{24}H_{36}N_2S_2$	2331	$C_6H_{12}N_2S_2$
2307	$C_{10}H_{19}NS$	2332	$C_9H_{16}N_2S_2$
2308	$C_{11}H_{17}NS$	2333	$C_3H_8N_2S_2$
2309	$C_{11}H_{26}N_2S$	2334	$C_{16}H_{35}NS$
2310	$C_{13}H_{28}N_2S$	2335	$C_{14}H_{32}N_2OS$
2311	$C_{16}H_{36}N_2S$	2336	$C_5H_{10}N_4S_2$
2312	$C_4H_{13}N_2PS_4$	2337	$C_6H_{16}N_6S_2Zn$
2313	$C_6H_{18}N_3PS_4$	2338	$C_6H_{16}CuN_6S_2$
2314	$C_8H_{21}N_2PS_3$	2341	$C_7H_{17}NO_3S_2$
2315	$C_6H_{13}NOS$	2342	$C_{10}H_{13}N_3O_2S$
2316	$C_7H_{17}NS$	2343	$C_7H_{17}N_3OS$
2317	$C_{10}H_{24}N_2S_2$	2345	$C_{17}H_{37}NO_3S_2$
2318	$C_{14}H_{32}N_2O_3S_2$	2346	$C_5H_{11}NO_2S$
2319	$C_{10}H_{13}NO_2S_2$	2347	$C_6H_{15}NO_3S$
2320	$C_{12}H_{15}NS$	2348	$C_8H_{20}N_2HS_2$
2321	$C_7H_{12}N_2O_2S$	2349	$C_8H_{20}N_2PdS_2$
2322	$C_7H_{10}N_2O_2S$	2350	$C_{12}H_{28}N_2PdS_2$
2323	$C_8H_{12}N_2O_2S$	2351	$C_{12}H_{28}N_2NiS_2$
2324	$C_{16}H_{35}NO_3S_2$	2352	$C_{16}H_{36}N_2NiS_2$
2325	$C_3H_8N_2O_3S_3$	2353	$C_{20}H_{44}N_2NiS_2$
2326	$C_{11}H_8F_{15}NOS$	2354	$C_{12}H_{28}Cl_2N_2Ni_2S_2$
2327	$C_7H_8F_7NOS$	2356	$C_{19}H_{41}NO_3S_2$
2328	$C_4H_9NO_4S_2$	2357	$C_7H_{11}NO_3S$
2329	$C_8H_{14}N_2S_2$	2358	$C_7H_{11}NO_2S_2$
2330	$C_2H_7N_3S$	2359	$C_8H_{13}NO_2S_2$

<u>WF. No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2360	$C_8H_{13}NO_3S$	2386	$C_{11}H_{25}NO_3S_2$
2361	$C_7H_{11}NO_3S$	2387	$C_{10}H_{23}NO_3S_2$
2362	$C_{20}H_{43}NO_3S_2$	2388	$C_{10}H_{19}NO_4S$
2363	$C_{10}H_{25}N_3S$	2389	$C_4H_{11}NO_2S$
2364	$C_4H_{10}N_2S_2$	2390	$C_{12}H_{27}NO_3S_2$
2365	$C_7H_{12}N_2S_2$	2391	$C_9H_{19}NS$
2366	$C_4H_8N_2S_2$	2392	$C_{14}H_{27}NS$
2367	$C_6H_{14}N_2OS$	2393	$C_7H_{15}NOS$
2368	$C_5H_{10}N_2S_2$	2394	$C_{10}H_{21}NS$
2369	$C_8H_{14}N_2S_2$	2395	$C_{10}H_{23}N_3S$
2370	$C_5H_{10}N_2S_2$	2396	$C_{11}H_{26}N_2OS$
2371	$C_{22}H_{44}N_2O_4S_2$	2397	$C_{12}H_{19}NS$
2372	$C_8H_{16}N_2O_2S_4$	2398	$C_{14}H_{21}NS$
2373	$C_{10}H_{26}N_8S_2$	2399	$C_{22}H_{35}NS$
2374	$C_9H_{18}N_2O_2S_4$	2400	$C_8H_{16}N_2S$
2375	$C_5H_{12}N_2OS_2$	2401	$C_{10}H_{21}NO_3S_2$
2376	$C_{11}H_{22}N_2O_2S_4$	2402	$C_{10}H_{23}NO_3S_2$
2377	$C_3H_9N_3OS$	2403	$C_5H_{13}N_3S$
2378	$C_6H_{16}NO_3PS$	2404	$C_{12}H_{20}N_2S$
2379	$C_{12}H_{28}N_2O_6S_4$	2405	$C_{13}H_{30}N_2OS$
2380	$C_6H_{15}NO_3S_2$	2406	$C_4H_9N_3S$
2381	$C_9H_{21}NO_3S_2$	2407	$C_5H_{12}N_3S$
2383	$C_8H_{18}N_2S_2$	2408	$C_5H_{11}NO_3S_2$
2384	$C_{14}H_{32}N_2S_2$	2409	$C_{11}H_{18}N_2S_4$
2385	$C_8H_{18}NO_2S$	2410	$C_6H_{13}N_3S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2411	$C_{13}H_{29}NO_3S_2$	2456	$C_{10}H_{15}NO_3S_2$
2412	$C_{18}H_{39}NO_3S_2$	2459	$C_{14}H_{29}N_3S_3$
2414	$C_8H_{20}N_2OS$	2460	$C_{18}H_{22}N_4S_4$
2415	$C_{10}H_{24}N_2S$	2464	$C_{12}H_{22}F_3NOS$
2416	$C_8H_{20}N_2O_3S$	2465	$C_9H_{21}NOS$
2417	$C_5H_{10}N_2S$	2466	$C_{11}H_{17}NOS$
2418	$C_9H_{11}NOS_2$	2467	$C_{11}H_{17}NO_2S$
2420	$C_{12}H_{27}NO$	2468	$C_{14}H_{29}NS$
2421	$C_{14}H_{31}NOS$	2469	$C_7H_{17}NOS$
2422	$C_4H_{12}N_2OS$	2470	C_3H_9NS
2423	$C_8H_{10}FNS$	2471	$C_7H_{15}NO_2S$
2424	$C_7H_{11}NO_2S$	2472	$C_6H_{17}N_3S$
2425	$C_{42}H_{88}N_2S_{20}$	2473	$C_7H_{15}NO_5S_2$
2429	$C_{10}H_{13}NS$	2474	$C_6H_{16}N_2S_4$
2434	$C_{30}H_{52}N_2O_2S$	2477	$C_8H_{20}N_2OS$
2435	$C_{19}H_{40}O_2S$	2478	$C_{12}H_{16}N_2S$
2438	$C_7H_{13}N_3O_2S_2$	2481	$C_{12}H_{24}N_2O_2S_4$
2439	C_4H_9NS	2494	$C_8H_{20}N_2O_2S_2$
2448	$C_{11}H_{15}NO_2S$	2495	$C_{10}H_{24}N_2O_3S_2$
2450	$C_{12}H_{16}N_2OS_2$	2496	$C_7H_{17}NO_3S$
2451	$C_7H_{14}N_2O_2S_4$	2497	$C_{11}H_{26}N_2S_2$
2452	C_3H_9NS	2498	$C_{12}H_8N_2O_6S_2$
2453	$C_6H_{15}NO_6S_3$	2499	$C_{12}H_{24}N_2O_6S_4$
2454	$C_7H_{17}NO_2S$	2501	$C_{12}H_{26}OS$
2455	$C_7H_{17}NOS$	2502	$C_{11}H_{27}NO_3SS1$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2503	$C_{11}H_{27}NO_2SSi$	2560	$C_{10}H_{17}NS_2$
2504	$C_4H_9N_3S_2$	2561	$C_{14}H_{22}N_4O_4S_4$
2505	$C_{13}H_{16}N_2O_2S_2$	2562	$C_5H_{11}NS$
2506	$C_7H_{13}N_3OS_3$	2563	$C_6H_{10}N_2S$
2507	$C_4H_9NS_2$	2564	$C_7H_{15}NOS$
2508	$C_7H_{15}NS_2$	2565	$C_{13}H_{19}NS$
2509	$C_6H_{11}NS_2$	2566	$C_8H_{15}NOS$
2510	$C_6H_{12}N_2S_2$	2567	$C_5H_{13}N_3O_3S_2$
2511	$C_4H_9N_3OS$	2568	$C_7H_{11}NO_2S_2$
2512	$C_8H_{14}N_2O_2S_2$	2569	$C_{11}H_{25}N_3S$
2513	$C_{12}H_{15}N_3O_2S_2$	2570	$C_7H_{17}NOS$
2514	C_3H_5NOS	2571	$C_{10}H_{21}NO_3S_2$
2515	$C_{10}H_{16}N_2S_4$	2572	$C_{10}H_{23}NS$
2516	$C_3H_9NO_3S_2$	2573	$C_6H_{16}N_4S$
2517	$C_8H_{20}N_2O_8S_4$	2574	$C_8H_{19}NO_2S$
2518	$C_9H_{13}NO_3S_2$	2575	$C_{11}H_{25}NO_2S$
2523	$C_{12}H_{25}NO_3S_2$	2576	$C_{14}H_{29}NS$
2529	$C_5H_{12}N_2OS$	2577	$C_{18}H_{33}N_7O_6S_4$
2539	$C_{13}H_{29}NO_3S$	2578	$C_4H_{13}N_2O_3PS$
2540	$C_5H_{13}NS_2$	2579	$C_7H_{15}NO_3S_2$
2541	$C_8H_{18}INOS$	2580	$C_{12}H_{27}NS_2$
2542	$C_6H_{16}N_2O_2S_2$	2582	$C_5H_{11}NS_2$
2557	$C_9H_{22}N_2OS_2$	2583	$C_7H_9NOS_2$
2558	$C_7H_{13}NO_3S_2$	2584	$C_7H_9NO_2S$
2559	$C_8H_{13}NS_2$	2585	$C_6H_{10}O_2S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2586	$C_4H_7NS_2$	2631	$C_{12}H_{18}N_2O_3S_3$
2587	$C_6H_9NS_4$	2632	$C_{10}H_{14}N_2O_3S_3$
2588	$C_{10}H_{10}N_4OS$	2633	$C_9H_{17}NS_2$
2601	$C_5H_{13}NS$	2634	$C_{11}H_{16}N_2O_3S_3$
2602	$C_{12}H_{16}N_2O_3S_3$	2635	$C_{12}H_{22}N_2O_3S_3$
2603	C_4H_7NOS	2636	$C_{10}H_{13}NOS$
2605	$C_9H_{11}NO_2S_2$	2637	$C_8H_{19}NS$
2606	$C_{15}H_{34}N_2S_2$	2638	$C_5H_{11}NS$
2607	$C_{10}H_{19}NO_7S_2$	2639	$C_9H_{19}NS$
2608	$C_{12}H_{26}N_2O_3S_2$	2640	$C_{10}H_{21}NS$
2609	$C_8H_{15}NO_2S_2$	2641	$C_7H_{15}NS$
2610	$C_8H_{11}NO_3S_2$	2642	$C_7H_{15}NS_3$
2611	$C_6H_9NO_2S_2$	2643	$C_8H_{18}N_2OS$
2615	$C_6H_{14}N_4O_2S_2$	2644	$C_3H_9NO_2S_2$
2619	$C_6H_{11}N_3O_2S_2$	2645	$C_6H_{14}N_4O_4S_2$
2621	$C_8H_{20}N_2O_8S_4$	2646	$C_{10}H_{22}N_4O_6S_4$
2622	$C_6H_{13}NO_2S_2$	2647	$C_{10}H_{24}N_2O_6S_4$
2623	$C_3H_9NS_2$	2648	$C_7H_{15}NS$
2624	$C_8H_{19}NO_2S$	2649	$C_6H_{13}NO_3S_2$
2625	$C_6H_{13}N_3OS$	2650	$C_5H_{13}NO_3S_2$
2626	$C_{13}H_{17}NO_4S$	2651	$C_{10}H_{24}N_2O_6S_4$
2627	$C_7H_{15}N_3OS$	2652	$C_4H_{10}N_2O_3S_2$
2628	$C_{10}H_{15}NOS$	2654	$C_{13}H_{21}NO_2S$
2629	$C_{19}H_{31}NO_2S_2$	2658	$C_{11}H_{25}NO_3S_2$
2630	$C_{13}H_{20}N_2O_3S_3$	2659	$C_9H_{21}NO_3S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2660	$C_{10}H_{19}NS$	2703	$C_{15}H_{33}NOS$
2663	$C_4H_8FeN_2S_2$	2704	$C_4H_{11}NS_2$
2664	$C_7H_{17}NO_2S$	2705	$C_9H_{13}NS_2$
2665	$C_7H_{18}N_2S_2$	2706	$C_{11}H_{24}N_2O_3S_2$
2666	$C_9H_{22}N_2O_2S_2$	2707	$C_{11}H_{16}N_2O_3S_2$
2675	$C_{13}H_{21}NO_3S$	2708	$C_5H_{12}N_2O_3S_2$
2676	$C_4H_{12}N_2S_2$	2709	$C_{11}H_{25}NO_3S_2$
2677	$C_7H_{15}NO_4S$	2710	$C_8H_{11}NS_2$
2686	$C_{10}H_{13}NS_3$	2711	$C_{24}H_{26}N_2OS$
2687	$C_{11}H_{17}NS_2$	2712	$C_4H_7NO_2S_2$
2688	$C_{12}H_{19}NO_2S$	2713	$C_{14}H_{26}N_2O_2S_4$
2689	$C_{10}H_{11}NOS_2$	2714	$C_{13}H_{24}N_2O_2S_4$
2690	$C_{10}H_{23}NO_3S_2$	2715	$C_9H_{22}N_2S_2$
2691	$C_{12}H_{25}NO_3S_2$	2716	$C_{11}H_{26}N_2O_6S_4$
2692	$C_{17}H_{30}N_2S$	2717	$C_4H_{12}N_2O_6S_4$
2693	$C_4H_{12}N_2S$	2718	$C_4H_{12}N_2O_2S_2$
2694	$C_4H_9NO_2S_2$	2719	$C_9H_{20}N_4O_2S_2$
2695	$C_2H_7NO_2Se$	2720	$C_6H_{15}NS$
2696	$C_{12}H_{28}N_2S$	2721	$C_5H_{15}N_2O_3PS$
2697	$C_{11}H_{22}N_2O_2S$	2722	$C_8H_{19}NS_2$
2698	$C_9H_{13}NS_2$	2723	$C_9H_{13}NOS_2$
2699	$C_{10}H_{20}N_2O_3S_3$	2724	$C_5H_{12}N_2O_2S_2$
2700	$C_{16}H_{18}N_2O_3S_2$	2726	$C_6H_{14}N_2O_3S_2$
2701	$C_9H_{22}N_2OS_2$	2727	$C_6H_{14}N_2O_3S_2$
2702	$C_8H_{10}ClNS_2$	2728	$C_{14}H_{23}NO_7S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2729	$C_{13}H_{21}N_3O_7S$	2818	$C_6H_{15}NS_2$
2732	$C_{12}H_{27}NSSe$	2819	$C_6H_{16}NO_3PS$
2734	$C_6H_{13}NO_2S$	2820	$C_5H_9N_3S$
2738	$C_7H_{14}N_2OS_3$	2821	$C_5H_9NOS_2$
2739	$C_{12}H_{19}NO_3S$	2822	$C_6H_{17}N_2O_3PS$
2742	$C_{12}H_{22}N_2O_3S_2$	2823	$C_7H_{19}N_2O_3PS$
2743	$C_{12}H_{18}N_2O_3S_2$	2824	$C_8H_{21}N_2O_3PS$
2744	$C_{12}H_{19}NO_4S_2$	2825	$C_8H_{20}N_2S_2ZN$
2745	$C_4H_8F_3NS$	2826	$C_{10}H_{24}N_2PdS_2$
2750	$C_{13}H_{30}N_2O_2S_2$	2827	$C_8H_{14}N_2Nl_2O_4S_2$
2752	$C_8H_{10}N_2O_2S_2$	2836	$C_6H_{12}F_3NS$
2753	$C_5H_{13}NO_2S$	2837	$C_{17}H_{37}N_3S$
2754	$C_{12}H_{19}NO_3S_2$	2838	$C_{18}H_{37}N_3S_3$
2755	$C_{16}H_{19}NO_3S_2$	2839	$C_9H_{17}N_3O_3S_2$
2778	$C_{13}H_9NS_2$	2840	$C_9H_{13}NOS_2$
2801	$C_8H_{20}N_6O_2S_2$	2841	CH_4O_2S
2802	$C_7H_{18}N_2S_2$	2842	$C_8H_{18}O_2S$
2803	$C_{11}H_{23}NOS$	2844	$C_{12}H_{19}NO_6S$
2804	$C_{11}H_{16}N_2O_3S_3$	2845	$C_{10}H_{15}NO_4S$
2806	$C_7H_{13}NO_2S$	2846	$C_6H_{15}NO_3S$
2813	$C_{17}H_{21}NO_4S_2$	2847	$C_8H_{20}N_2S_2$
2814	$C_{11}H_{18}N_2S$	2848	$C_5H_{12}N_2O_3S_2$
2815	$C_{10}H_{24}N_2S$	2850	$C_{14}H_{29}NO_4S_2$
2816	$C_7H_{17}NOS$	2851	$C_{14}H_{31}NO_4S_2$
2817	$C_9H_{21}NS_2$	2852	$C_2H_6O_6S_4$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2853	C_2H_7NSe	2905	$C_6H_{15}NO_6S_2$
2854	$C_8H_{19}NOS$	2906	$C_{13}H_{27}NO_3S_2$
2855	$C_{10}H_{23}NOS$	2907	$C_{12}H_{27}NO_4S_2$
2856	$C_8H_{19}NO_3S_2$	2908	$C_{11}H_{25}NO_4S_2$
2857	$C_{13}H_{27}NO_4S_2$	2909	$C_{12}H_{27}NO_4S_2$
2859	$C_{10}H_{22}N_2O_2S$	2910	C_3H_9NOS
2860	$C_{16}H_{28}N_2S_6$	2911	$C_7H_{14}N_2S_2$
2861	$C_6H_{14}N_2OS$	2916	$C_{11}H_{17}N_3O_3S_2$
2862	$C_8H_{20}N_2O_3S_2$	2917	$C_4H_{11}NO_5S_2$
2863	$C_7H_{17}NOS$	2918	$C_{10}H_{21}NO_5S_2$
2864	$C_9H_{19}NO_3S_2$	2919	$C_{20}H_{39}NO_3S_2$
2865	$C_{10}H_{23}NO_4S_2$	2920	$C_{21}H_{27}NO_3S$
2866	$C_{14}H_{29}NO_3S_2$	2922	$C_6H_{10}F_5NOS$
2867	$C_8H_{10}ClNS_2$	2924	$C_{13}H_{24}N_2OS_2$
2868	$C_{13}H_{29}NO_3S_2$	2925	$C_{12}H_{22}N_2OS_4$
2869	$C_{10}H_{24}N_6O_2S_2$	2926	$C_{11}H_{25}NO_3S_2$
2870	$C_{14}H_{28}N_6O_4S_2$	2927	$C_{10}H_{12}INS$
2871	$C_{15}H_{31}NS$	2928	$C_7H_{15}NO_2S$
2872	$C_{13}H_{27}NS$	2929	$C_{10}H_{21}NO_2S$
2873	$C_{12}H_{26}N_2O_2S$	2930	$C_6H_9NOS_2$
2874	$C_8H_{17}NO_2S$	2931	$C_{19}H_{24}N_6S_3$
2875	$C_7H_{15}NO_2S$	2932	$C_6H_{16}N_2O_6S_4$
2888	$C_5H_{11}NO_2S_2$	2933	$C_6H_{16}N_2O_6S_4$
2889	$C_{14}H_{20}N_2O_4S_4$	2934	$C_8H_{20}N_2O_6S_4$
2904	$C_{15}H_{14}N_2O_3S_2$	2935	$C_7H_{18}N_2O_6S_4$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
2936	$C_9H_{22}N_2O_6S_4$	2981	$C_5H_{12}N_2O_4S_2$
2937	$C_{12}H_{15}NS$	2982	$C_5H_8N_2S$
2938	$C_7H_{10}F_7NOS$	2983	$C_{15}H_{32}N_6S_3$
2939	$C_8H_{19}NO_5S$	2984	$C_{12}H_{28}N_6O_2S_2$
2940	$C_{17}H_{29}NS$	2985	$C_{10}H_{24}N_6O_4S_2$
2941	$C_{13}H_{21}NO_4S_2$	2986	$C_5H_{13}NO_5S_2$
2942	$C_{11}H_{23}NO_3S_2$	2987	$C_{10}H_{24}N_2O_2S_2$
2943	$C_8H_{10}N_2O_2S_2$	2988	$C_{10}H_{24}N_2O_8S_4$
2944	$C_9H_{13}NOS_2$	2989	$C_5H_{10}F_3NOS$
2945	$C_{17}H_{29}NS_2$	2990	$C_{14}H_{29}NO_4S_2$
2946	$C_{13}H_{20}N_2O_3S_2$	2991	$C_{12}H_{27}NO_4S_2$
2947	$C_7H_{16}N_2O_3S_2$	2992	$C_4H_7NO_4S_2$
2948	$C_7H_{15}NO_5S_2$	2993	$C_{13}H_{19}NO_3S_2$
2949	$C_{11}H_{23}NS$	2994	$C_5H_{13}NOS$
2950	$C_{13}H_{27}NS$	2995	$C_{19}H_{22}FNOS$
2951	$C_{12}H_{27}NO_2S$	2996	$C_{21}H_{29}NO_3S$
2964	$C_{10}H_{24}N_2O_2S_2$	2997	$C_5H_{13}NO_4S_2$
2965	$C_{10}H_{24}N_2O_8S_4$	2998	$C_8H_{17}NO_7S_2$
2968	$C_7H_{17}NO_6S_2$	2999	$C_8H_{16}N_2O_4S_2$
2969	$C_7H_{17}NO_4S_2$	3022	$C_{11}H_{23}NOS$
2970	$C_9H_{21}NO_4S_2$	3023	$C_{24}H_{48}N_2S_2$
2971	$C_{10}H_{23}NO_4S_2$	3024	$C_{13}H_{29}NO_5S_2$
2972	$C_{12}H_{25}NO_4S_2$	3025	$C_8H_{18}N_2O_4S_2$
2973	$C_{13}H_{27}NO_4S_2$	3026	$C_6H_{12}N_2S$
2974	$C_{24}H_{52}N_6O_4S_2$	3027	$C_{16}H_{16}N_2S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
3028	$C_{18}H_{29}NO_3S_2$	3079	$C_6H_{10}N_2O_4S_2Zn$
3029	$C_8H_7Cl_3O_2S_2$	3080	$C_6H_{10}N_2N_4O_4S_2$
3030	$C_8H_{11}NO_3S_3$	3081	$C_6H_{12}N_2O_4PtS_2$
3036	$C_{11}H_{16}O_2S_2$	3082	$C_9H_{18}CoN_3O_6S_3$
3037	$C_8H_9NS_3$	3084	$C_6H_{12}F_3NOS$
3038	$C_7H_{14}F_3NOS$	3085	$C_{10}H_{17}NO_3S_3$
3050	$C_{13}H_{21}NO_4S_2$	3086	$C_{13}H_{21}NO_3S_2$
3051	$C_6H_{13}NS$	3087	$C_{13}H_{21}NO_4S_2$
3052	$C_6H_{15}NO_3S$	3088	$C_{48}H_{110}N_{12}S_{24}$
3053	$C_4H_{12}N_2O_2Se_2$	3092	$C_6H_{10}Cd_2N_2O_4S_2$
3064	$C_4H_{12}N_2O_2S$	3093	$C_7H_{17}NO_5S_2$
3065	$C_5H_{12}N_2S$	3094	$C_7H_{18}N_2O_2S$
3066	$C_8H_{20}N_2O_2S$	3095	$C_5H_{13}NO_4S_2$
3067	$C_{19}H_{31}NO_3S_2$	3096	$C_9H_{14}F_7NOS$
3068	$C_{17}H_{16}N_2OS$	3097	$C_{10}H_{24}N_2O_2S_2$
3069	$C_{11}H_{23}NO_4S_2$	3098	$C_8H_{16}N_2OS$
3070	$C_{11}H_{25}NO_4S_2$	3099	$C_9H_{20}N_2O_4S_2$
3071	$C_{10}H_{14}ClNO_4S_2$	3100	$C_7H_{18}N_2OS$
3072	$C_{14}H_{23}NO_6S_2$	3114	$C_7H_{15}NS_3$
3073	$C_{10}H_{24}N_2N_1S_2$	3115	$C_6H_{15}NO_2S_2$
3074	$C_{10}H_{24}N_2N_1S_2$	3117	$C_6H_{13}NO_5S_2$
3075	$C_{12}H_{28}N_2N_1S_2$	3118	$C_{17}H_{19}N_3O_3S_2$
3076	$C_8H_{14}N_2N_1S_2$	3119	$C_5H_7NO_2S_5$
3077	$C_9H_{16}N_2N_1S_2$	3120	$C_8H_{14}F_5NO_2S$
3078	$C_{12}H_{22}N_2N_1S_2$	3122	$C_{12}H_{17}Cl_2NO_4S_2$

<u>Wk. No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
3123	$C_8H_{20}N_2O_2S_2$	3232	$C_{12}H_{25}NO_2S$
3124	$C_4H_{11}NO_4S_2$	3233	$C_{10}H_{15}NS$
3125	$C_{19}H_{23}NO_3S_2$	3235	$C_{10}H_{21}NO_3S_2$
3134	$C_{18}H_{27}NO_4S_2$	3236	$C_{13}H_{27}NO_4S_2$
3135	$C_{13}H_{19}IN_2S$	3237	$C_{11}H_{17}NO_4S_2$
3137	$C_{14}H_{34}N_4O_2S_2$	3238	$C_{13}H_{27}NO_3S_2$
3138	$C_4H_{10}O_4S_2$	3239	$C_{20}H_{27}NO_5S_2$
3139	$C_8H_{18}OS_3$	3240	$C_{12}H_{19}NO_5S_2$
3140	C_2H_7NOS	3241	$C_8H_{19}NOS$
3147	$C_{14}H_{23}NO_4S_2$	3243	$C_{10}H_{14}N_2S_2$
3148	$C_{10}H_{22}N_2S$	3244	$C_{10}H_{15}NO_2S_2$
3149	$C_{11}H_{24}N_2S$	3270	$C_5H_{10}N_2O_3S_2$
3150	$C_{13}H_{29}N_3S$	3271	$C_{20}H_{25}NO_4S_2$
3151	$C_{14}H_{27}N_3S$	3272	$C_{10}H_{23}NO_2S$
3152	$C_{11}H_{24}N_2S$	3273	$C_6H_{15}NO_6S_2$
3153	$C_{11}H_{21}NS$	3280	$C_{11}H_{18}N_2O_3S_2$
3154	$C_{11}H_{15}NS$	3281	$C_2H_8N_2O_2S$
3155	$C_{11}H_{21}NS$	3282	$C_{19}H_{23}N_3O_3S_2$
3156	$C_{11}H_{21}NS$	3283	$C_6H_{17}N_2O_3PS$
3157	$C_{14}H_{34}N_4O_2S_2$	3284	$C_{17}H_{20}N_3O_3PS$
3158	$C_7H_{18}N_2O_4S_2$	3285	$C_{23}H_{31}NO_4S_2$
3200	$C_{19}H_{29}NO_3S_2$	3286	$C_9H_{18}N_2OS$
3201	$C_{14}H_{32}N_2S$	3288	$C_9H_{19}NO_3S_2$
3229	$C_{13}H_{17}NO_3S$	3289	$C_6H_{14}N_2O_4S_2$
3231	$C_{20}H_{23}NO_3S_2$	3290	$C_6H_{12}N_2O_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
3291	$C_{11}H_{14}N_2O_3S_2$	3319	$C_8H_{16}N_2O_3S_2$
3292	$C_8H_{13}NS_2$	3325	$C_{21}H_{27}NO_3S_3$
3293	$C_{14}H_{23}NOS$	3326	$C_{12}H_{30}N_4O_2S_2$
3294	$C_8H_{14}N_2O_4S_2Zn_2$	3331	$C_{40}H_{84}N_2O_4S_2$
3295	$C_8H_{14}Cd_2N_2O_4S_2$	3332	$C_{40}H_{80}N_2O_4S_2$
3296	$C_4H_8ClNO_2Pd$	3333	$C_{40}H_{84}N_2O_2S_2$
3297	$C_7H_{17}NO_2S$	3334	$C_{40}H_{80}N_2O_6S_2$
3298	$C_{11}H_{23}NO_3S_2$	3335	$C_{13}H_{18}F_3NO_4S_2$
3299	$C_{12}H_{19}NO_4S_2$	3336	$C_{14}H_{23}NO_4S_2$
3300	$C_{12}H_{19}NO_4S_2$	3337	$C_{14}H_{23}NO_3S_2$
3301	$C_{12}H_{19}NO_4S_2$	3338	$C_{14}H_{23}NO_5S_2$
3302	$C_{13}H_{27}NO_3S_2$	3339	$C_{14}H_{29}NO_3S_2$
3303	$C_{22}H_{31}NO_7S_2$	3340	$C_{14}H_{23}NO_3S_2$
3304	$C_{14}H_{20}INO_5S_2$	3341	$C_{11}H_{23}NO_3S_2$
3305	$C_{12}H_{19}NO_4S_2$	3342	$C_{14}H_{23}NO_3S_2$
3306	$C_7H_{16}N_3OS$	3343	$C_{14}H_{23}NO_4S_2$
3307	$C_{10}H_{14}ClNOS$	3344	$C_{28}H_{62}N_4S_2$
3308	$C_7H_{16}N_2O_3S_2$	3345	$C_7H_{17}NO_3S$
3309	$C_6H_{11}NOS$	3346	$C_{20}H_{46}N_4O_2S_2$
3310	$C_{18}H_{22}N_3O_3PS$	3347	$C_{14}H_{34}N_4O_4S_2$
3311	$C_6H_{14}NO_3PS$	3348	$C_{12}H_{28}N_2O_4S_2$
3312	$C_{16}H_{33}NO_3S_2$	3349	$C_6H_{13}NS$
3313	$C_{14}H_{23}NO_3S_2$	3350	$C_{12}H_{26}N_4O_8S_4$
3317	$C_6H_{11}NO_2S_2$	3351	$C_8H_{20}N_2O_2S_3$
3318	$C_9H_{19}N_3O_3S$	3352	$C_5H_9NO_2S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
3353	$C_8H_{20}N_2O_8S_5$	3542	$C_5H_{11}NS$
3354	$C_{10}H_{15}NS_2$	3543	$C_4H_8N_2S$
3355	$C_5H_{11}NOS$	3547	$C_6H_{16}NO_2PS_2$
3356	$C_6H_{15}NOS$	3548	$C_{11}H_{17}NO_3S_2$
3357	$C_{20}H_{25}NO_3S_3$	3549	$C_{11}H_{17}NO_3S_2$
3358	$C_{12}H_{27}NO_3S_2$	3550	$C_{12}H_{19}NO_3S_2$
3359	$C_9H_{11}NO_3S_2$	3551	$C_{12}H_{19}NO_3S_2$
3360	$C_{10}H_{11}NO_5S_2$	3552	$C_8H_{11}NO_3S_2$
3361	$C_{11}H_{15}NO_5S_2$	3553	$C_5H_{11}NO_5S_2$
3423	$C_{12}H_{25}NO_4S_2$	3554	$C_8H_{17}NO_5S_2$
3426	$C_9H_{11}NO_4S_2$	3556	$C_8H_{17}N_3O_3S$
3427	$C_{13}H_{21}NO_3S_2$	3557	$C_8H_{17}NO_3S$
3428	$C_{13}H_{26}N_2S$	3558	$C_{14}H_{29}NO_3S_2$
3429	$C_4H_8N_2S$	3559	$C_6H_{16}N_2C_4S_2$
3431	$C_{12}H_{19}NS_2$	3560	$C_{16}H_{25}NO_3S_2$
3432	$C_8H_{17}NO_2S$	3561	$C_{13}H_{27}NO_3S_2$
3433	$C_{12}H_{19}NS$	3562	$C_{12}H_{25}NO_3S_2$
3434	$C_5H_{13}NOS$	3563	$C_{26}H_{51}NO_5S_2$
3435	$C_7H_{17}NO_5S_2$	3564	$C_{14}H_{29}NO_3S_2$
3436	$C_7H_{17}NO_4S_2$	3565	$C_{14}H_{23}NO_4S_2$
3537	$C_9H_{18}N_2O_3S_2$	3566	$C_{16}H_{31}NO_3S_2$
3538	$C_9H_{11}NS_3$	3567	$C_{14}H_{29}NO_4S_2$
3539	$C_{14}H_{29}NOS$	3568	$C_{10}H_{24}N_2O_4S_2$
3540	$C_{10}H_{15}NOS_2$	3569	$C_5H_{13}NO_5S_2$
3541	$C_{21}H_{35}NO_3S_2$	3574	$C_{10}H_{15}NO_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
3575	$C_9H_{13}NO_3S_2$	3623	$C_8H_{16}ClNS$
3583	$C_{11}H_{17}NOS$	3624	$C_8H_{16}ClNOS$
3584	$C_{11}H_{13}NO_2S_2$	3629	$C_4H_{12}N_2OS_2$
3596	$C_6H_{12}N_2OS_3$	3679	$C_6H_{16}NO_3PS$
3597	$C_7H_{15}NO_5S_2$	3680	$C_9H_{17}NO_7S_2$
3598	$C_7H_{15}N_3O_2S$	3681	$C_{14}H_{27}NO_7S_2$
3599	$C_7H_{15}N_3O_5S_2$	3682	$C_8H_{17}NO_4S_2$
3600	$C_{12}H_{26}N_4O_2S_2$	3683	$C_{10}H_{13}NO_4S_2$
3601	$C_{10}H_{20}N_2O_4S_2$	3684	$C_{11}H_{12}N_2O_3S_2$
3602	$C_6H_9NS_3$	3686	$C_8H_{17}N_3O_3S$
3603	$C_7H_{13}NS$	3687	$C_{13}H_{11}NO_2S_2$
3604	$C_6H_{15}NO_5S_2$	3688	$C_6H_5N_3OS$
3605	$C_{11}H_{23}NO_4S_2$	3689	$C_6H_{17}N_2O_3PS$
3606	$C_{14}H_{32}N_2O_6S_2$	3690	$C_5H_{12}NO_3PS_2$
3607	$C_7H_{17}NO_6S_2$	3691	$C_7H_{11}NS_2$
3608	$C_6H_{15}NC_3S_2$	3692	$C_5H_{10}N_2OS$
3609	$C_{14}H_{20}N_2C_3S_2$	3693	$C_{12}H_{19}N_3OS$
3610	$C_{14}H_{29}NO_4S_2$	3694	$C_7H_{20}N_2O_6P_2S_2$
3611	$C_{18}H_{29}NO_3S_2$	3695	$C_9H_{24}N_2O_6P_2S_2$
3612	$C_{18}H_{35}NO_3S_2$	3696	$C_{10}H_{26}N_2O_6P_2S_2$
3613	$C_{11}H_{23}NO_3S_2$	3698	$C_{10}H_{21}NO_2S$
3614	$C_{13}H_{27}NO_4S_2$	3699	$C_8H_{16}N_2O_2S_3$
3615	$C_8H_{16}ClNO_2S$	3819	$C_{12}H_{18}ClNO_4S_2$
3617	$C_9H_{15}NO_5S$	3820	$C_{24}H_{35}NO_5S_2$
3620	$C_{11}H_{20}ClNO_2S$	3821	$C_{14}H_{23}NO_4S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
3822	$C_{13}H_{21}NO_4S_2$	3851	$C_5H_{11}NO_2S$
3823	$C_7H_{15}NO_3S_2$	3852	$C_{10}H_{22}N_4O_2S_2$
3824	$C_{13}H_{27}NO_3S_2$	3853	$C_8H_{17}NO_5S_2$
3825	$C_{15}H_{31}NO_3S_2$	3854	$C_6H_{13}NS_3$
3827	$C_{28}H_{43}NO_7S_2$	3855	$C_{16}H_{31}NC_2S$
3828	$C_{15}H_{25}NO_5S_2$	3856	$C_{13}H_{20}N_2O_3S_2$
3829	$C_{20}H_{35}NO_3S_2$	3999	$C_{10}H_{23}NOS$
3830	$C_{13}H_{21}NO_5S_2$	4100	$C_5H_{11}NS_3$
3831	$C_{15}H_{31}NO_3S_2$	4101	$C_{12}H_{11}NO_2S_2$
3832	$C_{15}H_{25}NO_5S_2$	4102	$C_{12}H_{19}NO_4S_2$
3833	$C_{20}H_{23}NO_3S_2$	4103	$C_{14}H_{23}NO_4S_2$
3834	$C_{24}H_{35}NO_3S_4$	4104	$C_{12}H_{25}NO_3S_2$
3835	$C_{10}H_{24}N_2O_4S_2$	4105	$C_{16}H_{35}NO_3S_2$
3836	$C_8H_{15}NO_7S_2$	4106	$C_{12}H_{16}ClNO_4S_2$
3837	$C_{12}H_{23}NO_7S_2$	4107	$C_{14}H_{29}NO_3S_2$
3838	$C_{12}H_{23}NO_7S_2$	4108	$C_{22}H_{41}Cl_2NO_5S_2$
3839	$C_7H_{15}NO_5S_2$	4109	$C_{13}H_{21}NO_4S_2$
3840	$C_{10}H_{19}NO_5S_2$	4110	$C_{24}H_{35}NO_7S_2$
3841	$C_8H_{18}N_2O_4S_2$	4111	$C_{11}H_{23}NO_4S_2$
3842	$C_{18}H_{19}NO_5S_2$	4112	$C_6H_{14}N_2O_4S_2$
3844	$C_6H_{15}NO_2S$	4113	$C_4H_8N_2S$
3845	$C_7H_{18}N_2O_4S_2$	4114	$C_{12}H_{19}NO_3S_2$
3846	$C_{24}H_{54}N_4S_2$	4115	$C_{11}H_{24}N_2S$
3849	$C_3H_7N_3S$	4116	$C_4H_{11}NOS_2$
3850	$C_5H_{11}N_3S$	4117	$C_6H_{15}NOS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
4118	$C_{10}H_{15}NOS$	4438	$C_{15}H_{33}N_3S$
4120	$C_7H_{12}N_2OS$	4439	$C_{12}H_{27}N_3S$
4121	$C_{18}H_{16}N_2O_6S_2$	4440	$C_{13}H_{29}N_3O_3S_2$
4122	$C_6H_{16}NO_5PS$	4441	$C_{15}H_{33}N_3S$
4123	$C_6H_{15}NO_3S$	4442	$C_{15}H_{33}N_3O_3S_2$
4242	$C_6H_9NO_2S_2$	4443	$C_{11}H_{25}N_3S$
4243	$C_4H_9NO_2S_2$	4444	$C_{13}H_{27}NO_4S_2$
4244	$C_5H_{10}N_2OS$	4445	$C_{13}H_{27}NO_4S_2$
4245	$C_{10}H_{20}N_2O_3S_2$	4446	$C_{14}H_{29}NO_4S_2$
4259	$C_{10}H_{26}N_2C_{10}P_2S_2$	4447	$C_{12}H_{18}N_2O_6S_2$
4282	$C_7H_{18}N_2O_5S_2$	4466	$C_5H_9NO_2S$
4283	$C_{22}H_{46}N_4S_2$	4467	$C_6H_{12}N_2OS$
4312	$C_7H_{17}N_3S$	4468	$C_3H_{10}NO_3PS$
4333	$C_5H_{15}N_2O_3PS$	4469	$C_3H_{10}NO_3PS$
4376	$C_7H_{17}N_3O_3S_2$	4470	$C_4H_{12}NO_3PS$
4381	$C_{10}H_{15}NO_3S_3$	4471	$C_5H_{11}N_2O_3PS$
4428	$C_6H_{13}NO_2S_2$	4472	$C_6H_{16}NO_3PS$
4429	$C_5H_{11}NO_3S_2$	4473	$C_5H_{12}NO_5PS$
4430	$C_{10}H_{22}N_4O_2S_2$	4474	$C_6H_{14}NO_5PS$
4431	$C_8H_{22}N_2O_6P_2S_2$	4475	$C_{10}H_{20}NO_4PS$
4432	$C_{11}H_{24}N_2O_3S_2$	4476	$C_{12}H_{24}$
4433	$C_6H_{13}NO_5S_2$	4477	$C_{12}H_{24}NO_7PS$
4434	$C_9H_{21}N_3O_3S_2$	4478	$C_{18}H_{32}NO_7PS$
4436	$C_{13}H_{29}N_3S$	4479	$C_8H_{18}NO_4PS$
4437	$C_{11}H_{25}N_3O_3S_2$	4480	$C_{12}H_{24}NO_4PS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
4481	$C_{12}H_{24}NO_4PS$	4556	$C_7H_{15}NO_3S$
4482	$C_{14}H_{28}NO_7PS$	4611	$C_8H_{19}NO_2S$
4483	$C_{18}H_{31}NO_7S_2$	4612	$C_{17}H_{22}N_2O_2S_2$
4484	$C_{12}H_{23}NO_4S_2$	4614	$C_6H_{12}N_2O_3S_2$
4485	$C_{12}H_{19}NO_7S_2$	4615	$C_4H_{11}N_3O_3S_2$
4486	$C_{14}H_{27}NO_7S_2$	4616	$C_{12}H_{25}N_3OS$
4487	$C_{10}H_{19}NO_2S_2$	4617	$C_{20}H_{28}N_2S_4$
4534	$C_{12}H_{28}N_2O_3S_2$	4618	$C_{28}H_{41}N_3O_5S_2$
4535	$C_{11}H_{21}NO_3S_2$	4619	$C_5H_{13}NO_3S_2$
4536	$C_{16}H_{33}NO_3S_2$	4660	$C_7H_{15}NO_3S$
4537	$C_{18}H_{29}NO_4S_2$	4700	$C_{14}H_{14}S_3$
4538	$C_{14}H_{29}NO_4S_2$	4701	$C_{10}H_{15}NO_4S_2$
4539	$C_{15}H_{31}NO_3S_2$	4703	$C_{10}H_{23}NO_2S$
4540	$C_{14}H_{29}NO_4S_2$	4707	$C_4H_9NO_3S$
4541	$C_{12}H_{25}NO_4S_2$	4747	$C_9H_{19}NO_3S$
4542	$C_{14}H_{29}NO_4S_2$	4758	$C_{11}H_{19}NO_3S_3$
4543	$C_{14}H_{17}NO_4S_2$	4759	$C_{14}H_{23}NO_4S_2$
4544	$C_{16}H_{33}NO_4S_2$	4772	$C_4H_{11}NOS$
4545	$C_{15}H_{31}NO_4S_2$	4774	$C_9H_{19}NO_5S_2$
4546	$C_{14}H_{23}NO_4S_2$	4777	$C_{15}H_{25}NO_4S_2$
4547	$C_{12}H_{19}NO_4S_2$	4781	$C_{14}H_{29}NO_4S_2$
4548	$C_{14}H_{23}NO_4S_2$	4782	$C_{12}H_{18}NO_5PS$
4549	$C_{16}H_{20}N_4O_4S_4$	4783	$C_{15}H_{25}NO_4S_2$
4553	$C_{12}H_{20}N_2O_2S_2$	4786	$C_{16}H_{22}N_3O_4PS$
4555	$C_{12}H_{24}N_2O_3S_2$	4788	$C_{14}H_{23}NO_4S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
4790	$C_{13}H_{20}NO_5PS$	5033	$C_{12}H_{21}NO_3S_3$
4792	$C_{12}H_{18}ClNO_4S_2$	5034	$C_5H_9NO_2S_2$
4793	$C_{12}H_{26}NO_5PS$	5035	$C_{12}H_{23}NO_3S_2$
4794	$C_8H_{14}NO_5PS$	5041	$C_{11}H_{19}NS$
4795	$C_9H_{20}NO_5PS$	5045	$C_{11}H_{19}NS$
4797	$C_9H_{20}NO_5PS$	5132	$C_{10}H_{21}NO_3S$
4798	$C_8H_{13}F_5NO_5PS$	5133	$C_9H_{19}NO_2S$
4799	$C_7H_{13}F_3NO_5PS$	5134	$C_{16}H_{21}N_3S_2$
4805	$C_{14}H_{23}NO_4S_2$	5135	$C_{14}H_{34}N_4O_6S_4$
4808	$C_{12}H_{25}NS$	5136	$C_6H_{11}NO_3S_3$
4845	$C_6H_{13}NO_3S_2$	5137	$C_5H_{14}NO_3PS$
4853	$C_{20}H_{44}N_2O_4S_2$	5138	$C_7H_{14}N_2O_3S_2$
4917	$C_6H_{11}NO_2S_2$	5139	$C_{10}H_{16}NO_4PS$
5019	$C_9H_{19}NO_5S_2$	5141	$C_{22}H_{32}N_2S_4$
5020	$C_{11}H_{21}NO_5S_2$	5142	$C_8H_{11}NO_3S_2$
5021	$C_8H_{15}NO_5S_2$	5143	$C_{11}H_{18}NO_4PS$
5022	$C_8H_{13}NO_5S_2$	5144	$C_7H_{19}N_2O_3PS$
5023	$C_8H_{12}F_5NO_5S_2$	5145	$C_5H_{13}NO_6S_3$
5024	$C_{12}H_{20}N_3O_3PS_2$	5146	$C_{11}H_{17}NO_3S_3$
5025	$C_{10}H_{23}NO_2S$	5332	$C_{11}H_{17}NO_4S_2$
5026	$C_{10}H_{23}NO_2S$	5803	$C_9H_{19}NOS$
5027	$C_{20}H_{44}N_2O_4S_2$	5804	$C_{12}H_{15}NO_2S$
5029	$C_5H_{13}N_3S_2$	5805	$C_8H_{15}NOS$
5030	$C_5H_9NO_2S_2$	5806	$C_{12}H_{17}NOS$
5032	$C_5H_9NOS_2$	5807	$C_{16}H_{34}N_2OS_2$

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5817	$C_{15}H_{32}NO_5PS$
5818	$C_{17}H_{36}NO_5PS$
5819	$C_{11}H_{22}NO_5PS$
5820	$C_7H_{15}NO_5S_2$
5821	$C_{17}H_{35}NO_5S_2$
5822	$C_{13}H_{19}NO_5S_2$
5855	$C_5H_{10}N_2OS_3$
5879	$C_7H_{15}NO_3S_2$
5935	$C_4H_2N_2S_2$
5936	$C_6H_6N_2S_2$
5937	$C_{16}H_{14}N_2S_2$
5938	$C_8H_{10}N_2S_2$
5979	$C_{12}H_{19}NO_4S_2$
5980	$C_{12}H_{17}NO_3S_2$
5981	$C_{12}H_{18}BrNO_4S_2$
5982	$C_{10}H_{19}NO_3S_2$
5983	$C_{13}H_{21}NO_4S_2$
5984	$C_{14}H_{29}NO_3S_2$
5985	$C_{13}H_{21}NO_4S_2$
5987	$C_{13}H_{27}NS$
6120	$C_{10}H_{16}N_2O_3S_2$
6128	$C_{14}H_{23}NO_5S_3$
6129	$C_{12}H_{19}NO_5S_3$
6130	$C_{16}H_{16}BrNOS_2$
6131	$C_{10}H_{12}BrNS_2$

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6132	$C_{14}H_{13}ClN_2O_2S_2$
6133	$C_4H_{10}N_2S$
6134	$C_{12}H_{19}NO_5S_3$
6135	$C_{11}H_{23}NO_3S_2$
6136	$C_{13}H_{27}NO_3S_2$
6137	$C_{14}H_{23}NO_4S_3$
6138	$C_{13}H_{21}NO_4S_2$
6139	$C_{13}H_{21}NO_4S_2$
6165	$C_8H_{19}NO_5S_3$
6262	$C_{14}H_{22}NO_3PS$
6298	$C_{10}H_{21}NO_5S_3$
6306	$C_{15}H_{25}NO_6S$
6307	$C_8H_9NO_4S_2$
6309	$C_8H_8N_2O_6S_2$
6310	$C_{10}H_{12}N_2O_8S_4$
6311	$C_8H_8N_2O_6S_2$
6312	$C_9H_{11}NO_4S_2$
6313	$C_{10}H_{13}NO_4S_2$
6314	$C_8H_8BrNO_4S_2$
6315	$C_6H_{14}NO_5PS$
6316	$C_7H_{16}NO_5PS$
6317	$C_9H_{20}NO_6PS$
6318	$C_{13}H_{22}NO_5PS$
6347	$C_{11}H_{17}NO_5S_3$
6364	$C_6H_{16}N_2S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
6365	$C_7H_{18}N_2S$	700C	$C_{10}H_{23}NO_5S_3$
6366	$C_{10}H_{16}N_2O_3S_2$	7454	$C_{10}H_{16}NO_3PS$
6367	$C_8H_{17}N_3O_2S$	7455	$C_{13}H_{20}NO_4PS$
6368	$C_{22}H_{32}N_2O_2S_2$	7457	$C_{12}H_{13}F_{12}NO_5S_2$
6369	$C_{11}H_{17}NS_2$	7466	$C_{13}H_{27}NO_3S_2$
6370	$C_{11}H_{18}NO_3PS_2$	7467	$C_{14}H_{29}NO_3S_2$
6371	$C_7H_{15}NO_4S_3$	7468	$C_{12}H_{18}ClNO_3S_2$
6372	$C_{10}H_{11}NO_3S_3$	7470	$C_7H_{14}N_2O_4S_2$
6373	$C_{11}H_{13}NO_3S_3$	7471	$C_2H_3NO_3S_2$
6374	$C_{10}H_{12}N_2O_3S_2$	7472	$C_{11}H_{16}BrNO_5S_3$
6375	$C_{11}H_{14}N_2O_3S_2$	7766	$C_{21}H_{25}NO_5S$
6376	$C_8H_{16}NO_5PS$	7767	$C_{14}H_{15}NO_5S$
6399	$C_7H_{14}N_2O_3S_2$	7982	$C_{11}H_{23}NO_5S_3$
6400	$C_{14}H_{29}NO_3S_2$	7983	$C_9H_{21}NO_5S_3$
6401	$C_{13}H_{21}NO_4S_2$	8049	$C_{15}H_{25}NO_5S_3$
6402	$C_{13}H_{27}NO_3S_2$	8053	$C_7H_8N_2S_2$
6403	$C_{13}H_{27}NO_3S_2$	8161	$C_{10}H_{14}N_2O_4S_2$
6404	$C_{13}H_{27}NO_3S_2$	8164	$C_{13}H_{21}NO_5S_3$
6456	$C_{12}H_{24}N_2O_4S_2$	8165	$C_7H_{17}NO_3S_2$
6458	$C_5H_{13}N_2O_4PS$	8186	$C_4H_{12}NO_4PS$
6656	$C_7H_{17}NO_5S_3$	8187	$C_5H_{14}NO_5PS$
6799	$C_{22}H_{27}NO_3S$	8188	$C_{28}H_{55}NO_3S$
6923	$C_{12}H_{18}N_2O_6S_3$	8189	$C_8H_{15}NO_3S$
6924	$C_6H_{13}NO_5S_3$	8191	$C_{20}H_{40}N_2O_4S_2$
6999	$C_{15}H_{25}NO_5S_3$	8192	$C_5H_{14}NO_4PS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
8308	$C_{26}H_{43}NO_5S$	9053	$C_{25}H_{39}N_4O_3PS$
8309	$C_9H_{15}NO_3S_3$	9054	$C_8H_{19}N_2O_5PS$
8310	$C_{11}H_{16}ClNO_5S_3$	9055	$C_{11}H_{26}N_4O_3S_2$
8311	$C_{13}H_{21}NO_5S_2$	9056	$C_9H_{20}N_2O_5S_2$
8312	$C_{10}H_{14}N_2O_3S_3$	9057	$C_9H_{21}N_3O_4S_2$
8313	$C_{10}H_{17}NO_3S_3$	9058	$C_9H_{21}N_2O_5PS$
8314	$C_{12}H_{18}ClNO_4S_2$	9059	$C_8H_{20}NO_2PS_2$
8315	$C_{11}H_{23}NO_3S_2$	9061	$C_7H_{18}NO_2PS_2$
8316	$C_{11}H_{16}N_2O_4S_2$	9062	$C_{10}H_{22}NO_6PS$
8317	$C_{11}H_{16}N_2O_3S_3$	9063	$C_{13}H_{28}NO_5PS$
8361	$C_{12}H_{15}NO_2S_2$	9064	$C_{12}H_{20}N_3O_4PS$
8362	$C_{10}H_{16}NO_3PS_2$	9069	$C_{15}H_{26}N_3O_4PS$
8363	$C_8H_{10}N_4O_3S_2$	9070	$C_{23}H_{47}NO_5S_2$
8364	$C_9H_{12}N_4O_3S_2$	9071	$C_{13}H_{27}NO_5S_2$
8365	$C_{10}H_{24}N_2O_6S_4$	9088	$C_{23}H_{43}NO_5S$
8366	$C_{14}H_{34}N_4S_2$	9089	$C_8H_{19}NO_2S$
8367	$C_{11}H_{17}NO_5S_3$	9090	$C_{29}H_{31}NO_8S$
8368	$C_{12}H_{29}N_2O_3PS$	9091	$C_{37}H_{37}NO_{10}S$
8369	$C_{13}H_{31}N_2O_3PS$	9092	$C_{29}H_{31}NO_8S$
8439	$C_{12}H_{18}ClNO_5S_3$	9093	$C_{10}H_{17}NO_3S_3$
8629	$C_7H_{17}NO_5S_3$	9094	$C_{18}H_{13}N_3O_4S_3$
8713	$C_6H_{18}N_2O_6P_2S_2$	9095	$C_9H_{19}NO_3S_2$
8782	$C_{12}H_{25}NO_5S_3$	9096	$C_{13}H_{27}NO_3S_2$
9051	$C_{14}H_{23}NO_5S_3$	9097	$C_{17}H_{20}N_2O_3S_3$
9052	$C_{23}H_{48}NO_5PS$	9462	$C_{11}H_{18}N_2O_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
9463	$C_{14}H_{18}N_2O_4S_2$	25098	$C_{17}H_{36}N_2OS_2$
9528	$C_{11}H_{25}NO_3S_2$	25099	$C_4H_8N_2S$
9575	$C_{11}H_{22}N_2O_3S_2$	25126	$C_9H_{13}N_3O_3S_2$
9716	$C_{13}H_{30}N_2O_3S_2$	25127	$C_8H_{12}N_2O_3S_3$
9717	$C_8H_{18}N_2O_6S_4$	25176	$C_{16}H_{27}NO_5S_3$
9718	$C_{22}H_{26}N_4S_6$	25210	$C_{10}H_{22}N_2S$
9719	$C_8H_{17}N_3O_2S$	25211	$C_7H_{10}N_2O_4S_2$
9720	$C_5H_{14}N_2O_3S_2$	25212	$C_{14}H_{29}NO_3S_2$
9721	$C_6H_{13}NO_4S_3$	25329	$C_{21}H_{25}N_3O_5S_2$
9722	$C_{13}H_{19}N_3O_2S$	25330	$C_{15}H_{19}N_3O_5S_2$
9723	$C_{11}H_{18}NO_5PS$	25331	$C_{15}H_{31}NO_4S_2$
9724	$C_{13}H_{19}N_3O_5S_2$	25416	$C_{11}H_{16}ClNO_5S_3$
9725	$C_{14}H_{30}N_4O_2S_2$	25417	$C_{11}H_{17}NO_5S_3$
9766	$C_{18}H_{20}N_2S$	25422	$C_6H_{14}INO_2S$
9767	$C_{23}H_{25}NO_3S_2$	25871	$C_{11}H_{25}NO_3S$
9768	$C_{19}H_{33}NO_3S_2$	25872	$C_{10}H_{22}NO_4PS$
9839	$C_{18}H_{31}NO_5S_3$	25875	$C_{14}H_{23}NO_5S_2$
9840	$C_{11}H_{14}N_2O_3S$	25876	$C_{12}H_{19}NO_5S_2$
9841	$C_{15}H_{14}N_2O_3S$	25877	$C_7H_{19}N_2O_3PS$
9842	$C_{16}H_{15}NO_3S$	25878	$C_6H_{16}N_2O_3S_2$
15504	C_2H_6OS	25879	$C_{13}H_{25}N_3O_2S$
17637	$C_7H_8O_3S$	25880	$C_{14}H_{36}N_4O_6P_2S_2$
19635	$C_6H_{14}O_2S_2$	25881	$C_{15}H_{22}N_3O_3PS$
22047	$C_2H_5N_3S_2$	25882	$C_9H_{14}N_2O_3S_3$
25077	$C_{10}H_{24}NO_5PS$	25883	$C_6H_{16}N_2O_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
25884	$C_8H_{11}N_3O_3S_2$	27077	$C_8H_{20}NO_5PS$
25885	$C_{15}H_{20}N_2O_4S_2$	27286	$C_{18}H_{20}N_2O_2S_2$
25897	$C_{12}H_{28}N_4O_3S_2$	27388	$C_{11}H_{14}N_2O_3S_2$
25898	$C_8H_{19}N_3O_3S_2$	27389	$C_{20}H_{28}N_4O_3S_2$
25899	$C_{13}H_{28}N_4O_4S_2$	27390	$C_6H_{11}N_2O_5PS$
25900	$C_{13}H_{20}N_4O_4S_2$	27391	$C_{23}H_{50}N_3O_4PS$
25901	$C_{15}H_{24}N_4O_4S_2$	27392	$C_{24}H_{52}N_3O_4PS$
25902	$C_{13}H_{29}N_4O_4PS$	27393	$C_{20}H_{29}N_4O_3PS$
25903	$C_9H_{14}NO_3PS$	27394	$C_{17}H_{23}N_4O_4PS$
25904	$C_8H_{20}N_3O_3PS$	27395	$C_{19}H_{27}N_4O_4PS$
25905	$C_{15}H_{31}N_4O_4PS$	27396	$C_{18}H_{40}N_2O_6S_2$
25906	$C_{13}H_{21}N_4O_4PS$	27544	$C_8H_{11}N_3O_3S_2$
25907	$C_{15}H_{25}N_4O_4PS$	27631	$C_{20}H_{35}NS_2$
25930	$C_{14}H_{18}N_2O_4S_2$	27632	$C_{20}H_{32}N_2S_2$
25935	$C_9H_7NO_5S_2$	27633	$C_5H_{11}NO_3S_2$
26125	$C_{11}H_{24}NO_4PS$	27656	$C_{16}H_{25}NO_3S_2$
26169	$C_9H_{14}N_2OS$	27657	$C_{13}H_{21}N_5O_5S_2$
26330	$C_5H_{13}NS$	27658	$C_{11}H_{17}NO_3S_3$
26331	$C_7H_{17}NS$	27716	$C_9H_{18}N_2O_3S_2$
26332	$C_8H_{15}NO_2S_2$	27730	$C_9H_{20}N_2S$
26723	$C_{24}H_{44}N_2O_4S_2$	27736	$C_8H_{20}NO_5PS$
26904	$C_8H_{12}N_2O_4S_2$	27737	$C_{12}H_{16}N_2O_3S_4$
26934	$C_{19}H_{33}NS_2$	27738	$C_9H_{21}NO_3S$
26935	$C_{20}H_{35}NOS_2$	27739	$C_{11}H_{13}NOS_3$
26936	$C_{19}H_{32}ClNS_2$	27740	$C_6H_{11}NOS_3$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
27748	$C_{13}H_{29}NO_5S_2$	30462	$C_{26}H_{56}N_2O_4S_2$
28350	$C_{10}H_{11}N_3S_2$	31870	$C_{10}H_{17}NS_2S_1$
28444	$C_{12}H_{26}N_4O_2S_2$	31893	$C_{14}H_{23}NOS$
28445	$C_{26}H_{48}N_6O_4S_2$	31894	$C_{11}H_{23}NS$
28446	$C_{14}H_{30}N_4O_8S_4$	31896	$C_{11}H_{23}NS$
28447	$C_{14}H_{22}N_2O_5S_2$	31899	$C_{10}H_{14}N_2O_4S_2$
28448	$C_{13}H_{19}BrN_2O_5S_2$	32061	$C_{12}H_{29}N_4O_3PS$
29449	$C_8H_{20}N_2O_6P_2S_2$	32062	$C_9H_{22}N_3O_4PS$
28669	$C_{11}H_{25}N_4O_4PS$	32063	$C_{12}H_{20}N_3O_4PS$
29005	$C_{13}H_{29}NO_2S$	32064	$C_{16}H_{28}N_3O_4PS$
29006	$C_4H_6Cl_3NS$	32065	$C_{11}H_{15}N_2O_3PS$
29237	$C_9H_{21}N_2O_5PS$	32067	$C_{27}H_{57}N_3O_4S_2$
29563	$C_{10}H_{24}N_2O_4S_2$	32379	$C_{11}H_{16}N_2O_3S_3$
29654	$C_8H_{11}N_3O_3S_2$	32558	$C_{22}H_{42}B_2N_2O_4S_2$
29655	$C_6H_{14}N_2O_3S_3$	32564	$C_{10}H_{23}NS$
29668	$C_{11}H_{27}N_4O_3PS$	33277	$C_{24}H_{48}N_2O_2S_2$
29669	$C_{17}H_{22}N_3O_4PS$	33278	$C_{10}H_{26}N_4S_2$
29670	$C_{17}H_{21}N_3O_4S_2$	33583	$C_{11}H_{19}NS_2S_1$
29671	$C_{19}H_{27}N_3O_4S_2$	33584	$C_{12}H_{21}NS_2S_1$
29672	$C_{11}H_{24}N_4O_4S_2$	33585	$C_{11}H_{21}NS_2S_1$
29673	$C_9H_{11}NOS$	33587	$C_{14}H_{13}N_3S_2$
29691	$C_{12}H_{17}NO_3S_2$	33711	$C_{15}H_{25}NOS$
29692	$C_{13}H_{19}NO_4S_2$	33712	$C_{15}H_{25}NO_4S_2$
30089	$C_4H_8Cl_3NOS$	33713	$C_{24}H_{48}N_2S_2$
30461	$C_{10}H_{22}N_2OS$	33714	$C_{28}H_{44}N_2O_2S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
33715	$C_{13}H_{27}NS$	33897	$C_{14}H_{23}NOS$
33716	$C_{15}H_{31}NOS$	33944	$C_5H_9N_3S_2$
33717	$C_{13}H_{21}NOS$	34140	$C_{14}H_{29}NS$
33718	$C_{30}H_{60}N_2O_2S_2$	34141	$C_{15}H_{29}NS$
33762	$C_{12}H_{15}N_3O_3S_2$	34142	$C_{14}H_{21}NOS$
33764	$C_7H_{10}N_2O_3S_3$	34408	$C_{11}H_{24}N_2S$
33767	$C_8H_{17}N_3O_5S_2$	34409	$C_{15}H_{32}N_2S$
33768	$C_9H_{23}N_3O_3S_2$	34425	$C_{12}H_{28}N_2SSi$
33769	$C_6H_{17}N_2O_3PS$	34426	$C_{14}H_{25}NS_2Si$
33770	$C_8H_{18}N_2S_2$	35112	$C_{13}H_{17}N_3O_3S_2$
33771	$C_{12}H_{21}NO_3S_2$	35997	$C_{14}H_{34}N_2O_6P_2S_2$
33772	$C_9H_{17}NO_3S_2$	35978	$C_3H_{10}NO_3PS$
33773	$C_6H_{16}N_2S$	35979	$C_{12}H_{22}NO_3PS$
33775	$C_{10}H_{24}N_2SSi$	35980	$C_9H_{23}N_3S$
33782	$C_{16}H_{19}N_3S$	35982	$C_7H_{14}N_2S$
33783	$C_{13}H_{18}FeNO_3PS$	35983	$C_7H_{18}N_2S$
33785	$C_{15}H_{32}N_3O_4PS$	35984	$C_9H_{14}N_2S_2$
33786	$C_{15}H_{20}N_3O_4PS$	35985	$C_5H_{12}N_2OS$
33787	$C_{31}H_{66}N_5O_3PS_2$	35986	$C_7H_{18}N_2O_3S_2$
33788	$C_{16}H_{22}N_3O_3PS_2$	35987	$C_{12}H_{20}N_4S$
33789	$C_{12}H_{17}NO_4S_2$	36159	$C_{28}H_{44}N_2O_2S_2$
33790	$C_{31}H_{65}N_5O_3S_3$	36160	$C_{14}H_{23}NOS$
33791	$C_{13}H_{17}FeNO_3S_2$	36161	$C_{11}H_{19}N_3O_4S_3$
33895	$C_{26}H_{40}N_2O_2S_2$	36162	$C_{13}H_{25}NS$
33896	$C_{30}H_{48}N_2O_2S_2$	36163	$C_{14}H_{27}NS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
36164	$C_5H_{11}NOS$	37720	$C_{12}H_{18}N_2O_4S_2$
36165	$C_{18}H_{34}N_4O_8S_4$	38485	$C_{13}H_{23}NS_2S1$
36174	$C_6H_{14}N_4S_4$	38486	$C_9H_{23}NO_3SS1$
36246	$C_6H_{10}N_2O_5S_2$	38488	$C_{14}H_{18}N_2O_4S_2$
36247	$C_{19}H_{23}NO_4S_2$	38489	$C_{15}H_{23}NOS$
36248	$C_{27}H_{58}N_3O_3PS_2$	38490	$C_{14}H_{21}NOS$
36249	$C_{17}H_{30}N_3O_5PS$	38491	$C_{26}H_{40}N_2O_2S_2$
36951	$C_{16}H_{36}N_2O_2S_2$	38492	$C_{14}H_{27}NS$
36952	$C_{26}H_{52}N_2S_2$	38493	$C_{15}H_{25}NOS$
36953	$C_{10}H_{18}N_2O_4S_3$	38947	$C_{11}H_{28}N_2O_2SS1$
36954	$C_{13}H_{25}NS$	39045	$C_9H_{13}N_3O_3S_2$
36955	$C_{16}H_{21}ClN_2O_4S_2$	39046	$C_9H_{14}N_2O_3S_3$
36956	$C_{13}H_{21}NOS$	39047	$C_{10}H_{13}ClN_2O_3S_3$
36957	$C_{13}H_{27}NS$	39066	$C_{11}H_{19}NS_2S1$
36958	$C_{15}H_{25}NO_4S_2$	39067	$C_{14}H_{27}NS_2S1$
36959	$C_{26}H_{52}N_2S_2$	39068	$C_{14}H_{25}NS_2S1$
36960	$C_{15}H_{25}NOS$	39742	$C_{13}H_{27}NS$
36978	$C_{11}H_{26}NO_4PS$	39743	$C_{15}H_{23}NOS$
37675	$C_{14}H_{18}N_2OS$	39744	$C_{16}H_{25}NOS$
37678	$C_9H_{14}N_2O_4S_2$	39746	$C_8H_{17}NOS$
37679	$C_9H_{14}N_2O_4S_2$	39747	$C_{14}H_{23}N_3OS$
37696	$C_{10}H_{19}NS_2S1$	39748	$C_{14}H_{32}N_2O_2S_2$
37709	$C_4H_7N_3OS$	39749	$C_{18}H_{31}NO_4S_2$
37710	$C_3H_8N_2S_2$	39750	$C_{13}H_{19}BrClNO_4S_2$
37719	$C_{10}H_{20}N_2O_3S_2$	40333	$C_7H_{13}NO_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
40334	$C_{12}H_{23}NO_3S_2$	42405	$C_6H_{14}N_2O_2S_2$
40335	$C_{12}H_{24}NO_3PS$	42595	$C_{19}H_{32}N_2O_2S_2$
40336	$C_{12}H_{18}N_4O_2S$	42596	$C_{19}H_{32}N_2O_2S_2$
40337	$C_7H_{14}N_2O_3S_2$	42597	$C_9H_{22}NO_4PS$
40338	$C_{13}H_{20}N_2O_5S_2$	42756	$C_4H_8O_2S_2$
40339	$C_{12}H_{14}N_2O_5S_2$	42757	$C_7H_{19}NO_3S_2Si$
40340	$C_{12}H_{15}N_2O_5PS$	42758	$C_{13}H_{25}NS_2Si$
40341	$C_{13}H_{16}N_2O_5S_2$	42759	$C_{12}H_{23}NS_2Si$
40342	$C_{13}H_{17}N_2O_5PS$	42760	$C_{16}H_{25}NOS$
40343	$C_{14}H_{18}N_2O_5S_2$	42761	$C_{17}H_{24}N_2O_4S_2$
40640	$C_{17}H_{29}NO_4S_2$	42762	$C_{24}H_{36}Br_2N_4O_2S_2$
40641	$C_{13}H_{20}N_2OS$	42763	$C_9H_{19}NOS$
40642	$C_{34}H_{46}N_4O_2S_2$	42764	$C_{12}H_{19}BrN_2OS$
40643	$C_{26}H_{40}N_2O_4S_2$	42765	$C_{13}H_{23}N_3O_4S_2$
40644	$C_{30}H_{48}N_2O_2S_2$	42766	$C_{13}H_{23}N_3OS$
41040	$C_{17}H_{16}N_4O_2S$	43525	$C_9H_{10}N_2S$
41245	$C_{12}H_{23}NS$	43893	$C_{30}H_{48}N_2O_2S_2$
41261	$C_7H_{14}N_2S$	43894	$C_{18}H_{24}N_2OS$
41262	$C_8H_{16}N_2S$	43895	$C_{13}H_{24}N_2S$
41263	$C_9H_{19}NO_2S$	43896	$C_{14}H_{23}N_3OS$
41264	$C_{10}H_{21}NO_2S$	43898	$C_{13}H_{19}BrN_2OS$
41265	$C_8H_{20}NO_6PS_2$	43899	$C_{18}H_{31}NO_4S_2$
41266	$C_{11}H_{16}N_2O_4S_2$	43900	$C_{17}H_{19}BrN_2O_4S_2$
41788	$C_3H_6N_2S$	43901	$C_{29}H_{31}NOS$
42394	$C_7H_{19}N_3S_3$	44152	$C_{13}H_{16}N_2OS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
44153	$C_{13}H_{16}N_2OS$	50489	$C_{16}H_{24}ClNO_5S$
44154	$C_{13}H_{16}N_2O_4S_2$	50908	$C_6H_{13}NOS$
44923	$C_6H_{17}N_2O_3PS$	50909	$C_6H_{16}N_6S_4$
46358	$C_7H_{16}N_3O_3PS$	51519	$C_8H_{23}NSSi_2$
46359	$C_7H_{15}N_2O_4PS$	51520	$C_8H_{21}NO_3S_2Si$
46360	$C_{19}H_{27}N_4O_3PS$	51545	$C_9H_{15}NO_2S_2$
46361	$C_{24}H_{40}NO_5PS$	51691	$C_6H_{17}NO_3S_2Si$
48677	$C_6H_9NO_2S_2$	51983	$C_{12}H_{21}NS$
48678	$C_8H_{15}NO_3S_2$	51984	$C_{11}H_{26}N_2O_6S_4$
48679	$C_{13}H_{25}N_3S$	51986	$C_{10}H_{17}NO_2S_2$
48680	$C_{24}H_{44}N_2S_2$	51988	$C_{11}H_{17}NO_2S_2$
48681	$C_{13}H_{23}N_3S$	51989	$C_{14}H_{19}N_2O_5PS$
48682	$C_{12}H_{18}N_4O_5S_2$	52114	$C_{11}H_{26}NO_5PS$
48683	$C_6H_{12}N_2C_3S_2$	53374	$C_{11}H_{21}NO_3S_3Si$
48684	$C_6H_{12}N_4O_2S_2$	53376	$C_{11}H_{21}NS_2Si$
48948	$C_{17}H_{16}N_4OS_2$	53377	$C_7H_{17}NO_3S_2Si$
48950	$C_5H_{10}N_2OS$	53378	$C_{12}H_{21}NS_2Si$
49563	$C_{12}H_{21}N_2O_4PS$	53470	$C_{11}H_{24}N_2OS$
50480	$C_{12}H_{19}BrN_2O_4S_2$	54202	$C_{10}H_{15}BrN_2OS$
50481	$C_8H_{16}ClNS$	54203	$C_{10}H_{15}BrN_2O_4S_2$
50483	$C_{19}H_{35}N_3O_8S_4$	54204	$C_{15}H_{20}N_2O_4S_2$
50485	$C_{12}H_{21}NO_2S$	54205	$C_{13}H_{27}NO_3S_2$
50486	$C_{13}H_{24}ClNO_4S$	54206	$C_{13}H_{23}N_3O_4S_2$
50487	$C_{14}H_{26}ClNO_4S$	54207	$C_{14}H_{23}NO_4S_2$
50488	$C_{15}H_{22}ClNO_5S$	54208	$C_{16}H_{33}NO_4S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
54209	$C_{16}H_{27}NO_4S_2$	61135	$C_{15}H_{23}NOS$
54550	$C_{11}H_{18}N_3O_3PS$	61136	$C_9H_{18}N_2S_2$
54551	$C_{12}H_{17}NOS$	61137	$C_{12}H_{23}NO_2S$
54554	$C_{13}H_{21}NO_3S_2$	61138	$C_{15}H_{20}N_2OS$
54556	$C_7H_{14}N_2O_2S$	61139	$C_{12}H_{22}N_2O_3$
54558	$C_{11}H_{15}NO_4S_2$	62069	$C_5H_{12}N_2S$
54818	$C_5H_{11}NO_3$	62459	$C_{20}H_{26}N_4S_4$
57669	$C_{10}H_9N_3OS$	62460	$C_{14}H_{27}N_3S_2$
57857	$C_{22}H_{46}N_4O_2S_2$	62461	$C_{13}H_{26}N_2S$
59417	$C_8H_{20}NO_5PS$	62940	$C_{15}H_{20}N_2O_5S_2$
60185	$C_{10}H_8F_{15}NO_3S_2$	62941	$C_{11}H_{28}N_2O_6P_2S_2$
60187	$C_6H_8F_7NO_3S_2$	62942	$C_{12}H_{26}N_2O_6S_4$
60188	$C_4H_8F_3NO_3S_2$	62943	$C_{12}H_{28}N_2O_6P_2S_2$
60237	$C_{12}H_{18}N_2O_4S_2$	62944	$C_{12}H_{26}N_2S_2$
60238	$C_{11}H_{16}N_2O_3S_2$	62945	$C_7H_{19}N_2O_3PS$
60239	$C_9H_{12}N_2S$	62946	$C_5H_{10}N_2O_3S_2$
61126	$C_{17}H_{26}N_3O_4PS$	62947	$C_9H_{14}N_2S$
61127	$C_{10}H_{13}NOS$	63083	$C_{12}H_{18}N_2S_2$
61128	$C_{11}H_{15}NOS$	67627	$C_{12}H_{18}N_4O_2S$
61129	$C_{11}H_{16}N_2OS$	67634	$C_{13}H_{20}N_4O_2S$
61130	$C_{12}H_{18}N_2OS$	67638	$C_5H_{11}NO_2S$
61131	C_4H_9NS	67657	$C_9H_{17}NO_3S_2$
61132	$C_6H_{13}NOS$	67698	$C_4H_{12}N_3O_3PS$
61133	$C_{14}H_{27}NS$	67803	$C_8H_{11}N_3S$
61134	$C_{16}H_{20}N_2OS$	67808	$C_9H_{13}N_3S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
67833	$C_{11}H_{14}N_4O_3S_2$	74128	$C_{18}H_{39}N_2O_3PS$
68815	$C_{14}H_{29}NO_3S_2$	74129	$C_{12}H_{15}N_2O_5PS$
69062	$C_{12}H_{14}BrN_3OS$	74130	$C_{15}H_{23}FeN_2O_3PS$
69884	$C_{10}H_{22}NO_3P_3$	74131	$C_{17}H_{27}FeN_2O_3PS$
69885	$C_{10}H_{22}NO_3PS_3$	74132	$C_{19}H_{25}NOS$
69886	$C_{12}H_{26}NO_3PS_3$	74169	$C_{16}H_{28}NO_3PS$
70035	$C_{11}H_{26}N_3O_4PS$	74170	$C_9H_{17}NS$
70036	$C_8H_{12}AsNO_2S$	74171	$C_9H_{18}NO_3PS$
70037	$C_{10}H_{23}N_2O_4PS$	74172	$C_5H_{15}N_2O_3PS$
70038	$C_{16}H_{27}NO_3S_2$	74173	$C_{15}H_{21}N_2O_5PS$
70039	$C_{11}H_{25}N_2O_3PS$	74174	$C_{17}H_{26}N_3O_5PS$
70040	$C_{11}H_{27}N_2O_3PS$	74175	$C_{17}H_{25}N_3O_5S_2$
71460	$C_{12}H_{19}N_3OS$	74176	$C_{12}H_{26}N_2O_6S_4$
71462	$C_{12}H_{18}BrNO_3S_2$	74177	$C_4H_{11}N_3OS$
71463	$C_{11}H_{19}N_3O_4S_2$	74178	$C_{11}H_{26}N_3O_4PS$
71466	$C_{15}H_{25}NO_4S_2$	74326	$C_9H_{11}NS$
71471	$C_{14}H_{29}NO_3S_2$	75232	$C_{10}H_{24}NO_3PS$
71475	$C_{22}H_{36}N_6O_2S_2$	75233	$C_{14}H_{18}N_4O_6S_4$
73853	$C_8H_{16}NO_4PS$	75234	$C_{15}H_{26}N_2O_4S_2$
74054	$C_{15}H_{24}N_2OS$	75235	$C_{18}H_{36}NO_3PS$
74056	$C_{14}H_{23}NOS$	75236	$C_{11}H_{19}N_3O_6S_2$
74058	$C_{13}H_{20}N_2OS$	75237	$C_{14}H_{23}NO_4S_2$
74062	$C_{12}H_{21}N_2O_3PS$	75238	$C_{14}H_{23}NO_4S_2$
74126	$C_{14}H_{29}N_2O_3PS$	75611	$C_{16}H_{18}N_2S$
74127	$C_{14}H_{31}N_2O_3PS$	75612	$C_{16}H_{18}N_2S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
75613	$C_4H_{10}N_2S$	76970	$C_8H_{15}N_2O_5PS$
75614	$C_8H_{10}N_2S$	76971	$C_9H_{16}N_2O_5S_2$
75615	$C_{14}H_{15}IN_2S$	76972	$C_9H_{17}N_2O_5PS$
75719	$C_{10}H_{10}BrN_3OS$	77548	$C_6H_{15}NO_2S_3$
76062	$C_{11}H_{18}N_2S_2$	77913	$C_3H_{10}NO_4PS$
76063	$C_4H_8F_3NOS$	79336	$C_{11}H_{15}N_4O_3PS$
76733	$C_5H_{11}NS$	79337	$C_{11}H_{14}N_4S$
76734	$C_{10}H_{25}NOSSi$	80316	$C_{13}H_{21}NO_2S_3$
76735	$C_{14}H_{27}NO_3S_3Si$	80393	$C_{12}H_{27}N_2O_3PS$
76736	$C_{12}H_{23}NO_3S_3Si$	80394	$C_{14}H_{31}N_2O_3PS$
76737	$C_7H_{19}NSSi$	80395	$C_6H_{14}N_4O_4S_2$
76738	$C_8H_{22}N_2SSi$	80396	$C_{12}H_{18}N_4O_4S_2$
76739	$C_9H_{21}NSSi$	80397	$C_{17}H_{23}N_3O_4S_2$
76740	$C_7H_{19}NOSSi$	80405	$C_{16}H_{33}N_2O_3PS$
76741	$C_8H_{21}NS_2Si$	80406	$C_{16}H_{35}N_2O_3PS$
76742	$C_{10}H_{25}NO_4S_2Si$	80407	$C_{20}H_{43}N_2O_3PS$
76840	$C_9H_{10}N_2O_3S_2$	80408	$C_{19}H_{34}FeN_2O_3PS$
76841	$C_4H_{10}N_2S$	80409	$C_{11}H_{27}N_4O_3PS$
76842	$C_2H_6N_2S$	80410	$C_9H_{17}NO_4S_2$
76843	$C_8H_{17}NO_3S_3$	80411	$C_8H_{11}AsClNO_2S$
76844	$C_8H_{17}NO_4S_3$	80685	$C_4H_{12}N_2S_2$
76966	$C_{10}H_{19}N_3S$	80783	$C_{12}H_{16}N_4O_3S_2$
76967	$C_{12}H_{26}N_2S_2$	80855	$C_7H_{19}N_2O_3PS$
76968	$C_{12}H_{28}N_2O_6P_2S_2$	80856	$C_{13}H_{16}N_4O_7S$
76969	$C_8H_{14}N_2O_5S_2$	80857	$C_{14}H_{19}N_2O_5PS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
80858	$C_8H_{14}N_2O_2S_2$	81893	$C_{11}H_{15}NO_5S_2$
80859	$C_{10}H_{15}ClN_2O_4S_2$	82409	$C_{10}H_{12}N_2O_2S$
80860	$C_6H_{12}ClNS$	82422	$C_{12}H_{19}ClN_2O_4S_2$
80862	$C_{10}H_{12}N_2OS$	82969	$C_4H_{12}N_2S_2Zn$
80863	$C_{10}H_{12}N_2S_2$	84133	$C_{10}H_{18}N_2O_5S_2$
80864	$C_3H_6N_2OS$	84134	$C_{10}H_{19}N_2O_5PS$
80865	$C_{12}H_{20}N_2O_5S_2$	84135	$C_{15}H_{20}N_4O_2S$
80866	$C_{20}H_{28}Br_2N_4O_2S_2$	84136	$C_{17}H_{34}N_2O_2S_2$
81009	$C_4H_8N_2O_2S_2$	84137	$C_8H_{15}NO_3S_2$
81579	$C_{10}H_{15}IN_2S$	84138	H_4NO_2PS
81580	$C_{10}H_{14}N_2S$	85561	$C_6H_{11}NO_2S$
81581	$C_{14}H_{12}N_2OS$	85562	$C_{13}H_{19}ClN_2OS$
81582	$C_{16}H_{24}N_2OS$	85563	$C_{12}H_{19}ClN_2OS$
81583	$C_7H_{18}BrN_3S$	85564	$C_{15}H_{21}N_3S_2$
81855	$C_6H_{15}N_4O_3PS_2$	85565	$C_{13}H_{22}N_2O_4S_2$
81856	$C_{11}H_{23}N_2O_3PS$	85566	$C_{24}H_{36}Cl_2N_4O_2S_2$
81857	$C_{18}H_{38}N_2O_3S_2$	85567	$C_{15}H_{22}N_2O_2S$
81858	$C_8H_{11}AsN_2O_4S$	86101	$C_4H_{12}N_2N_1S_2$
81859	$C_{10}H_{15}AsN_2O_4S$	87331	$C_{15}H_{23}NO_3S_3$
81860	$C_9H_{19}NOS_2$	87332	$C_8H_{17}NO_6S_3$
81861	$C_3H_{10}N_2S$	88294	$C_5H_{10}N_2O_3S_2$
81862	$C_{10}H_{14}N_2S$	88299	$C_{12}H_{19}N_3O_5S_3$
81864	$C_{11}H_{14}N_2O_2S$	88300	$C_{10}H_{14}N_2S$
81866	$C_9H_{18}N_2S$	88301	$C_8H_{18}N_2OS$
81867	$C_{10}H_{22}N_2S$	88302	$C_5H_{14}N_4S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
88304	$C_9H_{20}N_2OS$	90243	$C_6H_{14}N_4S_2Se_2$
88305	$C_5H_{10}N_2S$	90704	$C_{13}H_{23}NO_4S_2Si$
88307	$C_9H_{16}N_2O_3S$	90707	$C_{20}H_{50}N_4S_4Si_2$
88309	$C_8H_{10}N_4O_5S_2$	91480	$C_4H_{13}AsN_2O_2S_2$
88310	$C_8H_{18}N_4O_6S_4$	91482	$C_{10}H_{24}NO_3PS$
88311	$C_7H_{16}N_2S$	91483	$C_{10}H_{24}NO_2PS_2$
88885	$C_6H_{13}NS$	91484	$C_8H_{17}NOS_2$
88894	$C_8H_{21}N_2O_3PS_2$	91485	$C_9H_{16}N_2O_2S$
88895	$C_{12}H_{17}N_4O_3PS_2$	91486	$C_{14}H_{18}N_2O_2S$
88897	$C_8H_{13}AsN_2O_2S$	91487	$C_{20}H_{21}FeNOS$
88898	$C_8H_{11}AsN_2O_5S$	91488	$C_{17}H_{22}N_2S_2$
88899	$C_7H_{16}N_2S_2$	91489	$C_{10}H_{15}N_3O_6S_2$
90185	$C_{14}H_{27}NS_2Si$	91490	$C_{11}H_{18}N_2S_3$
90187	$C_{14}H_{19}N_3O_3Si$	91491	$C_{13}H_{22}N_2OS$
90188	$C_{14}H_{17}N_3OSSi$	91492	$C_{11}H_{20}N_2S_3$
90200	$C_{14}H_{18}N_2O_5S_2$	91493	$C_{10}H_{15}N_3O_6S_2$
90201	$C_9H_{22}N_2O_6S_4$	91494	$C_{13}H_{21}BrN_2O_4S_2$
90202	$C_{10}H_{24}N_2O_6S_4$	91495	$C_{13}H_{21}BrN_2OS$
90203	$C_{10}H_{22}N_2O_6S_4$	91496	$C_{14}H_{21}BrN_2OS$
90204	$C_{10}H_{24}N_2O_6P_2S_2$	91497	$C_{10}H_{16}N_4S_2$
90205	$C_{11}H_{18}N_4S_2$	91499	$C_{26}H_{40}Br_2N_4O_2S_2$
90206	$C_6H_{13}NO_2S$	91635	$C_{12}H_{25}NO_3S_2$
90240	$C_{26}H_{54}N_4S_4$	91824	$C_6H_{15}IN_2S$
90241	$C_8H_{18}N_4S_4$	92434	$C_8H_{10}FN_3O_3S_2$
90242	$C_6H_{16}N_6S_4$	92437	$C_8H_9N_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
92438	$C_8H_{11}N_3O_3S_2$	94530	$C_5H_{12}N_2O_2S$
92439	$C_6H_{13}N_3O_5S_2$	94531	$C_{17}H_{29}BrN_2O_4S_2$
92440	$C_9H_{13}N_3O_4S_2$	94532	$C_{18}H_{29}BrN_2OS$
92441	$C_4H_{10}N_2O_6S_4$	94533	$C_{12}H_{22}N_2O_4S_2$
92485	$C_9H_9NO_2S$	94534	$C_{12}H_{22}N_2O_4S_2$
92967	$C_7H_{15}NO_5S_3$	94535	$C_{17}H_{29}BrN_2OS$
92968	$C_{12}H_{11}NO_3S$	94536	$C_{17}H_{29}BrN_2OS$
92969	$C_{14}H_{32}N_2O_6S_4$	94537	$C_{31}H_{56}Br_2N_4O_2S_2$
92970	$C_{12}H_{28}N_2O_6S_4$	94538	$C_{14}H_{22}N_2OS$
92971	$C_{11}H_{26}N_2O_6S_4$	94539	$C_{14}H_{30}N_2S_2$
92972	$C_{18}H_{19}N_3OS$	94540	$C_9H_{20}N_2OS$
92973	$C_{12}H_{22}N_2O_3S_2$	94541	$C_{13}H_{28}N_2OS$
92974	$C_5H_{11}NS$	94542	$C_{13}H_{19}IN_2OS$
92979	$C_{16}H_{30}N_3O_3PS$	94543	$C_{16}H_{25}BrN_2OS$
92980	$C_{18}H_{24}NPS_2$	94789	$C_7H_{15}NOS_2$
92982	$C_{10}H_{13}NOS$	94790	$C_{12}H_{17}NOS_2$
92983	$C_{13}H_{19}NOS_2$	94791	$C_{13}H_{24}N_2OS$
92984	$C_{12}H_{16}N_2O_2S$	94792	$C_{13}H_{17}NO_3S$
92985	$C_{18}H_{26}N_2OS$	94793	$C_{18}H_{28}N_4O_2S$
92986	$C_{13}H_{14}N_2O_3S$	94794	$C_{18}H_{18}N_2OS$
93238	$C_9H_{12}N_2OS$	94795	$C_4H_8N_2O_3S_3$
94140	$C_{13}H_{22}N_2O_3S_2$	95565	$C_{11}H_{11}NO_3S$
94292	$C_{10}H_{18}N_2O_3S_2$	95566	$C_{10}H_{10}N_2OS$
94293	$C_{12}H_{22}N_2O_3S_2$	95567	$C_{10}H_{11}NOS$
94529	$C_{14}H_{21}BrN_2OS$	95568	$C_6H_{10}Cl_3NO_2S$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
95569	$C_{16}H_{15}NO_2S$	98131	$C_9H_{18}N_2OS$
95570	$C_5H_7F_6NOS$	99575	$C_{12}H_{19}IN_2O_4S_2$
95571	$C_{11}H_{22}N_2O_4S_2$	99576	$C_{10}H_{13}BrN_2OS$
98060	$C_9H_{16}N_2O_3S_2$	99578	$C_6H_{14}O_2S_2$
98073	$C_{10}H_{17}N_3O_4S_2$	99579	$C_{13}H_{22}N_2OS$
98074	$C_{13}H_{16}N_2O_4S_2$	99580	$C_{16}H_{33}NS_2$
98075	$C_{14}H_{18}N_2O_5S_2$	99581	$C_{12}H_{18}Br_2N_2O_4S_2$
98076	$C_8H_{13}N_3O_4S_2$	99582	$C_{12}H_{19}BrN_2O_4S_2$
98077	$C_{12}H_{22}N_4O_8S_4$	99583	$C_{13}H_{18}Br_2N_2OS$
98078	$C_8H_{13}N_3OS$	99584	$C_{13}H_{19}BrN_2OS$
98079	$C_{14}H_{18}N_2O_2S$	99585	$C_{18}H_{37}NS_2$
98080	$C_{10}H_{16}N_2O_4S_2$	99586	$C_9H_{13}BrN_2OS$
98081	$C_{10}H_{17}N_3O_4S_2$	99587	$C_{12}H_{19}IN_2OS$
98082	$C_{15}H_{20}N_2O_4S_2$	99588	$C_{12}H_{18}Br_2N_2OS$
98101	$C_{15}H_{27}NO_3S_2S^1$	99589	$C_{24}H_{34}Br_4N_4O_2S_2$
98109	$C_{18}H_{30}N_4OS$	99590	$C_9H_{13}N_2O_4S_2$
98110	$C_{18}H_{28}N_2O_2S$	99597	$C_{16}H_{36}N_2O_6S_4$
98111	$C_{19}H_{26}N_2OS$	99598	$C_{15}H_{34}N_2O_6S_4$
98112	$C_{18}H_{30}N_2O_2S$	99599	$C_{12}H_{30}N_4S_2$
98113	$C_{10}H_{15}N_3OS$	99600	$C_9H_{14}N_2O_4S_2$
98114	$C_{15}H_{17}N_3OS$	99601	$C_{10}H_{18}N_2O_5S_2$
98115	$C_{13}H_{16}N_2OS$	99602	$C_{12}H_{20}N_2O_5S_2$
98116	$C_{14}H_{17}F_6N_3OS$	99603	$C_7H_{15}NG_2S_2$
98117	$C_7H_{10}F_6N_2OS$	99604	$C_7H_{16}NO_5PS$
98120	$C_8H_{18}N_4S_4$	100555	$C_5H_{12}N_2OS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
101822	$C_8H_{21}NOSSi$	104702	$C_{24}H_{36}Br_2N_4O_2S_2$
102230	$C_{17}H_{20}N_2S$	104703	$C_{12}H_{17}BrN_2OS$
102231	$C_{14}H_{26}N_2S$	104704	$C_9H_{13}ClN_2O_4S_2$
102232	$C_9H_{17}NO_2S$	104705	$C_{15}H_{18}N_2OS$
102233	$C_8H_{10}O_6S_4$	104706	$C_{16}H_{22}N_2O_4S_2$
102262	$C_6H_{13}N_2O_3PS$	104707	$C_7H_{10}O_2S$
102263	$C_9H_{19}NO_2S$	104708	$C_7H_{12}O_2S$
102264	$C_7H_{12}N_2OS$	104709	$C_8H_{14}O_4S_2$
102265	$C_{12}H_{24}N_2OS$	104710	$C_{12}H_{22}O_2S_2$
102266	$C_{11}H_{15}NOS_2$	104722	$C_{14}H_{24}N_2O_5S_2$
102267	$C_{16}H_{26}N_2O_2S$	104723	$C_{13}H_{22}N_2O_5S_2$
102268	$C_{16}H_{24}N_2OS$	104724	$C_{11}H_{20}N_2O_5S_2$
102269	$C_{20}H_{27}N_3OS$	104725	$C_{13}H_{30}N_2O_6S_4$
102270	$C_9H_{12}N_2O_3S_2$	104731	$C_{14}H_{34}N_2O_6P_2S_2$
102547	$C_{12}H_{18}N_2S$	104733	$C_{11}H_{28}N_2O_6P_2S_2$
103582	$C_2H_6N_2OS$	105131	$C_{12}H_{12}N_2O_3S$
104302	$C_5H_{12}N_2O_3S_2$	105132	$C_8H_{18}N_2OS$
104694	$C_7H_{14}N_2OS$	105436	$C_6H_{11}NO_2S$
104695	$C_{11}H_{17}BrN_2O_4S_2$	105442	$C_{11}H_{13}NO_2S_2$
104696	$C_{12}H_{19}N_3O_6S_2$	106155	$C_{11}H_{17}BrN_2OS$
104697	$C_{14}H_{22}BrClN_2OS$	106156	$C_{14}H_{18}N_2O_4S_2$
104698	$C_{18}H_{24}Br_2N_4O_2S_2$	106157	$C_{18}H_{26}N_2O_4S_2$
104699	$C_{12}H_{19}BrN_2OS$	106158	$C_{19}H_{26}N_2OS$
104700	$C_{14}H_{18}N_2O_4S_2$	106159	$C_{13}H_{21}ClN_4OS$
104701	$C_{10}H_{13}ClN_2OS$	106160	$C_{15}H_{18}N_2OS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
106161	$C_{15}H_{18}N_2OS$	108532	$C_{12}H_{29}N_2O_5PS$
106162	$C_{13}H_{21}ClN_2O_4S_2$	108537	$C_{13}H_{18}N_4O_2S$
106163	$C_{17}H_{22}N_2OS$	108538	$C_{14}H_{32}NO_3PS$
106164	$C_{26}H_{40}Cl_2N_4O_2S_2$	108539	$C_{16}H_{20}NPS_3$
106165	$C_{13}H_{21}ClN_2OS$	108540	$C_8H_{20}NO_3PS$
108250	$C_2H_7N_2O_3PS$	108541	$C_9H_{21}N_3S_2$
108417	$C_{13}H_{25}NO_3S_3Si$	108542	$C_7H_{16}N_2OS$
108424	$C_9H_{20}N_4O_6S_4$	108543	$C_8H_{17}NO_2S$
108501	$C_{17}H_{22}N_2OS$	108544	$C_{12}H_{20}N_2O_4S_2$
108502	$C_{15}H_{19}ClN_2O_4S_2$	108571	$C_{14}H_{31}NO_2S_3$
108503	$C_{14}H_{21}ClN_2OS$	109342	$C_{13}H_{22}N_2S$
108504	$C_{11}H_{17}ClN_2O_4S_2$	109343	$C_9H_{19}N_3OS$
108505	$C_{12}H_{17}ClN_2OS$	111477	$C_4H_8O_2S_2$
108506	$C_{11}H_{28}N_4S_2$	111478	$C_{12}H_{24}N_2O_4S_4$
108507	$C_{16}H_{38}N_2O_6P_2S_2$	111479	$C_{22}H_{34}N_2O_3S_2$
108508	$C_{15}H_{36}N_2O_6P_2S_2$	111485	$C_{11}H_{17}ClN_2OS$
108509	$C_{13}H_{32}N_2O_6P_2S_2$	111486	$C_{16}H_{21}ClN_2O_4S_2$
108510	$C_{10}H_{26}N_2O_6P_2S_2$	111487	$C_{16}H_{19}ClN_2OS$
108511	$C_8H_{22}N_2O_6P_2S_2$	111488	$C_{17}H_{21}ClN_2OS$
108512	$C_{14}H_{25}N_2O_5PS$	111489	$C_{16}H_{28}N_2O_4S_2$
108513	$C_{13}H_{23}N_2O_5PS$	111490	$C_{16}H_{22}N_2O_5S_2$
108514	$C_{12}H_{21}N_2O_5PS$	111491	$C_{16}H_{22}N_2O_4S_2$
108515	$C_7H_{15}NS_2$	111492	$C_{17}H_{23}ClN_2O_4S_2$
108530	$C_{13}H_{24}N_3O_3PS$	111499	$C_{20}H_{20}NPS_2$
108531	$C_9H_{21}N_2O_3PS$	111500	$C_{16}H_{20}NPS_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
111501	$C_{12}H_{20}NO_2PS_2$	117900	$C_{12}H_{19}BrN_2O_4S_2$
111502	$C_{12}H_{20}NO_3PS$	117909	$C_{12}H_{26}NO_3PS$
111503	$C_{10}H_{16}NO_2PS_2$	117914	$C_{14}H_{24}NO_4PS$
111504	$C_6H_{16}NO_2PS_2$	117917	$C_{15}H_{26}NO_4PS$
111505	$C_5H_{13}N_3S_2$	117930	$C_{16}H_{19}ClN_2OS$
111506	$C_4H_{11}N_3S_2$	117931	$C_{13}H_{19}N_3O_4S_2$
113191	$C_9H_{16}N_2O_3S_2$	117932	$C_{14}H_{18}N_2O_4S_2$
113260	$C_{10}H_{25}NOSSi$	117933	$C_{13}H_{20}N_2OS$
114388	$C_{11}H_{16}N_2O_3S_2$	117934	$C_{17}H_{28}N_2OS$
114389	$C_8H_{17}N_3S_2$	117935	$C_{11}H_{16}N_2OS$
114390	$C_{11}H_{16}NO_3PS_2$	120767	$C_{13}H_{21}NO_4S_2$
114391	$C_3H_{11}N_2O_3PS$	120768	$C_{17}H_{23}ClN_2O_4S_2$
114392	$C_8H_{21}N_2O_3PS$	120769	$C_{15}H_{19}ClN_2O_4S_2$
114393	$C_{10}H_{19}N_2O_5PS$	121223	$C_{20}H_{24}N_4O_2S$
114394	$C_{15}H_{20}N_2O_5S_2$	121224	$C_{15}H_{21}N_2O_5PS_2$
114395	$C_{14}H_{18}N_2O_5S_3$	121225	$C_{14}H_{19}N_2O_5PS_2$
114396	$C_{15}H_{20}N_2O_5S_3$	121226	$C_{16}H_{22}N_2O_5S_2$
114397	$C_{11}H_{24}N_4OS$	121227	$C_{22}H_{28}N_2S_4$
116728	$C_5H_{11}N_3S_2$	121228	$C_{12}H_{17}N_3S_2$
116731	$C_7H_{17}N_3S_2$	121229	$C_{11}H_{15}NS_2$
117247	$C_3H_9N_3S_2$	121230	$C_{11}H_{15}NO_3S_3$
117403	$C_9H_{12}N_2O_3S_3$	121231	$C_{12}H_{21}NO_3S_2$
117404	$C_3H_8N_2OS$	121334	$C_8H_8S_2$
117405	$C_{10}H_{22}O_3S_2$	121448	$C_{15}H_{21}NO_3S_2Si$
117883	$C_{18}H_{23}ClN_2OS$	121449	$C_{11}H_{12}O_2S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
121450	$C_9H_{17}N_3S$	123930	$C_8H_6Cl_2OS_2$
121451	$C_7H_{14}N_4O_4S_2$	123932	$C_3H_6OS_2$
121769	$C_{12}H_{21}NO_4S_2S_1$	123934	$C_{11}H_{14}OS_2$
122157	$C_9H_{18}N_2OS$	123935	$C_9H_{10}OS_2$
122158	$C_8H_{16}N_2O_2S$	123947	$C_4H_8O_2S_2$
122159	$C_9H_{19}NS$	123948	$C_{18}H_{24}N_2O_2S$
122160	$C_{13}H_{25}NO_3S_3S_1$	123949	$C_{19}H_{26}N_2OS$
122167	$C_{11}H_{13}N_3OS_2$	123950	$C_{15}H_{24}N_2OS$
122951	$C_{25}H_{23}NOSSI$	123951	$C_{17}H_{22}N_2OS$
122952	$C_{12}H_{21}NO_3S_2S_1$	123952	$C_{18}H_{23}ClN_2OS$
122957	$C_{14}H_{21}NOS$	123953	$C_{18}H_{26}N_2O_4S_2$
122958	$C_{16}H_{20}N_2O_2S$	124940	$C_{15}H_{26}N_2O_4S_2$
122959	$C_{17}H_{24}N_2O_5S_2$	124950	$C_{13}H_{20}Br_2N_2O_4S_2$
122960	$C_{15}H_{20}N_2O_5S_2$	124951	$C_{19}H_{28}N_2O_4S_2$
122961	$C_{10}H_{15}ClN_2OS$	124952	$C_{27}H_{26}N_2O_2SS_1$
122962	$C_{11}H_{15}ClN_2OS$	125046	$C_4H_{12}N_2S_3$
122963	$C_{10}H_{15}ClN_2O_4S_2$	125047	$C_8H_{17}NO_2S$
122964	$C_{20}H_{28}Cl_2N_4O_2S_2$	125049	$C_{21}H_{44}N_3O_4PS$
122965	$C_9H_{16}O_2S$	125050	$C_{11}H_{27}N_2O_3PS$
122966	$C_{14}H_{28}N_6O_4S_2$	125051	$C_8H_{18}NO_5PS$
122967	$C_{14}H_{19}N_5O$	125052	$C_9H_{22}N_3O_3PS$
122968	$C_{15}H_{20}N_2O_5S_2$	125053	$C_{11}H_{26}N_2O_3S_2$
122969	$C_4H_8O_2S_2$	125150	$C_{11}H_{13}NO_2S$
122970	$C_{16}H_{22}N_2O_4S_2$	125439	$C_{10}H_{21}NO_3S_2$
123086	$C_9H_{17}NO_2S_2$	125677	$C_{16}H_{29}NO_3S_2S_1$
123087	$C_8H_{16}ClNS_2$		

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
125678	$C_{34}H_{59}NO_3S_2Si_2$	132190	$C_7H_{16}N_2OS$
125688	$C_9H_{24}N_2O_6P_2S_2$	132191	$C_5H_8Cl_3NS$
125689	$C_9H_{22}N_2O_6S_4$	132192	$C_{13}H_{19}BrN_2S_2$
125690	$C_{13}H_{19}N_2O_6PS_2$	132193	$C_{14}H_{22}N_2OS_2$
125691	$C_{13}H_{18}N_2O_6S_3$	132194	$C_{14}H_{21}ClN_2S_2$
125692	$C_{12}H_{17}N_2O_6PS_2$	132195	$C_{11}H_{15}ClN_2S_2$
125693	$C_{12}H_{16}N_2O_6S_3$	132196	$C_{18}H_{21}F_3N_2OS$
125694	$C_{11}H_{14}N_2O_6S_3$	132197	$C_{14}H_{21}IN_2OS$
125695	$C_7H_{15}N_3O_2S_2$	132198	$C_5H_7N_2O_2PS$
125696	$C_{12}H_{22}NO_3PS$	132199	$C_{17}H_{21}F_3N_2O_4S_2$
125697	$C_{12}H_{21}NS$	132723	$C_9H_{10}ClN_3S_2$
126158	$C_7H_{19}N_2O_3PS$	132725	$C_3H_8OS_2$
126452	$C_{18}H_{24}N_2S_2$	132726	$C_{20}H_{40}N_2S_4$
126453	$C_3H_{10}NO_2PS$	132727	$C_{12}H_{25}NS_2$
126454	$C_{14}H_{20}Br_2N_2OS$	132806	$H_3NO_3S_2$
126455	$C_{13}H_{19}ClN_2S_2$	132919	$C_{12}H_{18}F_3NO_3S_2Si$
126456	$C_{17}H_{24}N_2O_4S_2$	132920	$C_{16}H_{31}NO_3S_3Si$
126457	$C_{18}H_{24}N_2S_2$	132921	$C_{14}H_{27}NO_3S_3Si$
127014	$C_{12}H_{17}N_5O_4S_2$	132922	$C_{11}H_{18}BrNO_3S_2Si$
127015	$C_{10}H_{17}N_3OS$	133564	$C_6H_{14}NO_5PS_2$
127016	CH_6NO_2PS	133565	$C_6H_{13}NO_5S_3$
127017	$C_4H_{12}NO_2PS$	133566	$C_{15}H_{32}NO_3PS$
128712	$C_8H_{17}NO_3S_2$	133567	$C_{14}H_{30}NO_3PS$
131155	$C_{13}H_{25}NO_3S_3Si$	133568	$C_{15}H_{31}NO_3S_2$
143189	$C_{12}H_{28}N_2S_2$	133569	$C_{14}H_{29}NO_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
133570	$C_3H_{10}N_2S$	138411	$C_{16}H_{25}NO_2S$
133635	$C_{11}H_{18}ClNO_3S_2Si$	138412	$C_{12}H_{18}Cl_2N_2O_4S_2$
134154	$C_7H_{15}NO_2S_4$	138413	$C_{13}H_{18}Cl_2N_2OS$
134783	$C_{14}H_{29}NS_2$	138414	$C_7H_{15}NOS$
134784	$C_{15}H_{17}F_3N_2O_4S_2$	138415	$C_{17}H_{35}NO_4S_2$
134786	$C_{12}H_{17}N_5O_4S_2$	138416	$C_6H_{10}N_2S$
134787	$C_{13}H_{19}IN_2S_2$	138417	$C_{13}H_{18}Cl_2N_2S_2$
134788	$C_{19}H_{26}N_2S_2$	138418	$C_{18}H_{35}NOS$
134790	$C_{12}H_{23}NO_3S_3Si$	138419	$C_{14}H_{27}NOS$
136178	$C_{16}H_{17}F_3N_2OS$	138677	$C_{17}H_{27}N_2O_3PSSi$
136179	$C_{14}H_{29}NS_2$	138736	$C_{15}H_{27}N_2O_4PS$
136180	$C_{16}H_{26}N_2OS$	138745	$C_{12}H_{22}NO_4PSSi$
136181	$C_{16}H_{28}N_2O_4S_2$	138746	$C_{12}H_{22}NO_3PSSi$
136182	$C_{17}H_{28}N_2OS$	138747	$C_{18}H_{24}N_2O_4S_4$
136216	$C_{15}H_{31}NS$	138766	$C_{18}H_{23}ClN_2S_2$
136217	$C_{10}H_{25}N_3S_2$	138768	$C_{11}H_{14}Cl_2N_2S_2$
136218	$C_{10}H_{15}NO_4S_2$	138769	$C_{14}H_{20}Cl_2N_2S_2$
136219	$C_{10}H_{16}NO_4PS$	138770	$C_{23}H_{35}NOS$
136220	$C_{14}H_{18}N_2O_5S_2$	138775	$C_{15}H_{22}NO_3PSSi$
136864	$C_{10}H_{18}NS_3$	139241	$C_{24}H_{52}N_2S_4$
136905	$C_{14}H_{27}N_2O_4PSSi$	139242	$C_{24}H_{52}N_2S_3$
137263	$C_8H_{19}NO_3S_2$	139243	$C_{12}H_{28}N_2S_3$
137601	$C_9H_{16}N_2O_2S_3$	139244	$C_{12}H_{30}N_8S_2$
137602	$C_{16}H_{24}N_2S_2$	139245	$C_{10}H_{22}N_4O_2S_2$
138410	$C_{13}H_{18}ClNOS$	139246	$C_6H_{14}O_2S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
139249	$C_6H_{18}SSi_2$	145378	$C_{15}H_{26}N_2O_4S_2$
142069	$C_{10}H_{11}NO_4S_2$	145720	$C_{12}H_{18}N_2O_2S$
142070	$C_{13}H_{10}O_2S_2$	145722	$C_{14}H_{20}N_2O_3S$
142071	$C_{14}H_{17}NO_5S_2$	145723	$C_{14}H_{23}BrN_2O_4S_2$
142073	$C_{13}H_{18}N_2O_3S_2$	145724	$C_{15}H_{23}IN_2OS$
142074	$C_{11}H_{13}N_3O_5S_2$	145725	$C_6H_{12}N_2S_2$
142075	$C_{14}H_{25}NS$	145727	$C_8H_{18}N_2O_4S_2$
142076	$C_{14}H_{26}NO_3PS$	146020	$C_{12}H_{15}NO_4S_2$
142077	$C_{14}H_{25}NO_3S_2$	146073	$C_6H_{16}N_2S_2$
142078	$C_{13}H_{23}NS$	146074	$C_4H_9NOS_2$
142079	$C_{13}H_{24}NO_3PS$	146075	$C_9H_{10}N_2S$
142080	$C_{13}H_{23}NO_3S_2$	146076	$C_6H_{11}N_3OS$
142081	$C_8H_{12}N_4S$	146092	$C_{11}H_{16}N_2O_4S_2$
142489	$C_6H_{17}N_2O_4PS$	146098	$C_{17}H_{22}N_2O_2S$
142824	$C_9H_{17}N_2O_3PS_2$	146099	$C_{17}H_{33}NOS$
143994	$C_{16}H_{31}NOS$	146104	$C_{14}H_{27}NS_2$
143995	$C_{22}H_{35}NO_4S_2$	146105	$C_{14}H_{23}IN_2O_4S_2$
143996	$C_{12}H_{20}ClN_2O_4PS$	146106	$C_7H_{12}N_2S_2$
144974	$C_{10}H_{13}NOS$	146107	$C_4H_{11}N_3S_2$
144975	$C_{15}H_{23}BrN_2OS$	146108	$C_4H_{12}N_2S_4$
144976	$C_{15}H_{23}ClN_2OS$	146109	$C_6H_{16}N_2S_3$
144981	$C_{12}H_{18}N_2O_5S_2$	146110	C_7H_7NOS
145038	$C_9H_{10}O_2S_2$	147007	$C_{11}H_{13}N_3OS$
145039	$C_{12}H_{16}N_2O_4S_4$	147953	$C_4H_{10}N_2O_4S_2$
145040	$C_{14}H_{24}N_2O_4S_2$	147954	$C_{11}H_{15}IN_2OS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
147955	$C_{26}H_{52}N_2S_2$	149528	$C_{18}H_{24}N_2O_6S_2$
147956	$C_5H_{12}N_2O_4S_2$	149750	$C_{15}H_{26}N_2O_4S_2$
148652	$C_3H_{11}N_5O_3S_2$	149846	$C_8H_{21}N_2O_3PS$
148655	$C_{15}H_{19}N_2O_7PS$	149847	$C_{14}H_{24}NO_4PS$
148656	$C_{15}H_{18}N_2O_7S_2$	149848	$C_{10}H_{27}N_3O_6P_2S_2$
148657	$C_{14}H_{18}N_2O_6S_2$	149849	$C_7H_{19}N_2O_4PS$
148658	$C_{16}H_{23}N_2O_5PS$	149960	$C_4H_4N_6S_4$
148659	$C_{16}H_{23}N_2O_5PS$	150066	$C_8H_{14}N_2O_5S$
148660	$C_{16}H_{22}N_2O_5S_2$	150069	$C_{17}H_{22}N_3O_3PS$
148661	$C_{15}H_{21}N_2O_5PS$	150070	$C_{23}H_{34}N_3O_3PS$
148662	$C_{15}H_{20}N_2O_5S_2$	150072	$C_{14}H_{33}NO_3SSi$
148663	$C_{11}H_{21}N_2O_5PS$	150073	$C_{16}H_{37}NO_3SSi$
148664	$C_{10}H_{15}NOS$	150075	$C_{18}H_{41}NO_3SSi$
148665	$C_{29}H_{53}NO_3S_2$	150076	$C_6H_{14}N_2OS$
148666	$C_{14}H_{25}NO_3S_2$	150077	$C_{12}H_{26}N_2OS$
148667	$C_{26}H_{44}N_2S_2$	150078	$C_9H_{12}N_2OS$
148743	$C_{12}H_{17}IN_2OS$	150079	$C_5H_{11}NO_2S_2$
148744	$C_6H_{12}N_2O_4S_2$	150080	$C_4H_9NO_2S_2$
148746	$C_9H_{13}N_3O_3S_2$	150081	$C_6H_{13}NO_2S_2$
148747	$C_6H_{14}N_2O_5S_2$	150082	$C_9H_{11}NCS_2$
148768	$C_{14}H_{23}NO_4S_2$	150084	$C_{18}H_{20}N_2O_2S_3$
149023	$C_8H_{21}N_2O_3PS$	150243	$C_{11}H_{14}N_2O_2S$
149024	$C_{14}H_{34}N_4S_2$	150244	$C_{11}H_{16}N_2O_2S$
149346	$C_{18}H_{24}N_2O_6S_2$	150245	$C_{10}H_{14}N_2OS$
149526	$C_{10}H_{20}N_2O_4S_2$	150248	$C_7H_{16}N_2OS$

<u>Wk No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
150249	$C_{10}H_{14}N_2OS$	151355	$C_{15}H_{24}ClN_3OS$
150632	$C_{12}H_{24}N_2O_3S_2$	151356	$C_{13}H_{28}N_2S$
150633	$C_{10}H_{20}N_2O_3S_3$	151358	$C_{15}H_{28}N_2O_4S_2$
150634	$C_{11}H_{18}N_2S$	152105	$C_8H_{12}Cl_2S$
150637	$C_{10}H_{20}N_2O_3S_2$	152910	$C_{10}H_{23}NO_4S_2$
150639	$C_{18}H_{30}N_2OS$	152911	$C_{11}H_{25}NO_4S_2$
150640	$C_{13}H_{22}N_2O_4S_2$	152912	$C_{13}H_{29}NO_4S_2$
150641	$C_{14}H_{22}N_2S_2$	152913	$C_{10}H_{24}NO_4PS$
150724	$C_6H_{16}N_2O_4S_4$	152914	$C_{13}H_{30}NO_4PS$
150728	$C_{16}H_{31}NO_6S_2$	152915	$C_{11}H_{26}NO_4PS$
151320	$C_{10}H_{20}N_2O_2S_2$	152916	$C_{12}H_{27}NO_4S_2$
151321	$C_{15}H_{28}NO_3PS$	152917	$C_{12}H_{28}NO_4PS$
151322	$C_{14}H_{23}NOS$	152918	$C_8H_{19}NO_4S_2$
151323	$C_{15}H_{27}NO_3S_2$	152919	$C_9H_{21}NO_4S_2$
151324	$C_6H_{17}N_2O_3PS$	152922	$C_{11}H_{23}NS_2$
151325	$C_5H_{15}N_2O_4PS$	152923	$C_5H_{11}NO_5S_2$
151326	$C_7H_{18}N_2S$	152924	$C_{12}H_{25}NS_2$
151327	$C_7H_{19}N_2O_3PS$	152925	$C_{14}H_{21}IN_2S_2$
151328	$C_{28}H_{30}N_2O_4P_2S_2$	153733	$C_5H_{10}O_2S$
151329	$C_{18}H_{22}NO_2PS$	154256	$C_6H_{13}NO_2S$
151330	$C_{16}H_{32}N_2S$	154621	$C_8H_9NO_2S_2$
151331	$C_{20}H_{38}N_4S_2$	154711	$C_5H_{12}OS$
151332	$C_{16}H_{24}BrClN_2OS$	154975	$C_{10}H_{21}NS_2$
151333	$C_{15}H_{24}BrN_3OS$	154976	$C_{10}H_{21}NS_2$
151334	$C_{23}H_{31}N_3OS$	154977	$C_{12}H_{25}NS_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
154978	$C_{13}H_{27}NS_2$	156903	$C_{18}H_{24}N_2O_4S_4$
154979	$C_{15}H_{31}NS_2$	156916	$C_8H_6O_4S_2$
154980	$C_{17}H_{35}NS_2$	156917	$C_{15}H_{28}N_2O_4S_2$
155419	$C_{26}H_{42}N_4S_2$	157066	$C_8H_{17}NO_2S$
156714	$C_{11}H_{23}NS_2$	157067	$C_9H_{19}NO_2S$
156715	$C_{12}H_{25}NS_2$	157069	$C_8H_{16}O_2S_2$
156716	$C_{13}H_{27}NS_2$	157070	$C_9H_{11}NOS_3$
156717	$C_{13}H_{18}Br_2N_2S_2$	157071	$C_{13}H_{19}NOS_3$
156718	$C_{14}H_{29}NS_2$	157072	$C_{14}H_{29}NS_2$
156720	$C_{18}H_{37}NS_2$	157073	$C_{14}H_{29}NS_2$
156772	$C_6H_{14}NO_2PS$	157075	$C_{14}H_{24}N_2O_3S_2$
156773	$C_{16}H_{27}NO_5S_2$	157076	$C_{15}H_{31}NS_2$
156783	$C_{16}H_{28}NO_5PS$	157077	$C_{15}H_{26}N_2O_3S_2$
156784	$C_{15}H_{27}NS$	157078	$C_{15}H_{26}N_2S$
156786	$C_4H_8O_2S_2$	157079	$C_{16}H_{33}NS_2$
156787	$C_6H_{17}N_2O_3PS$	157086	$C_{15}H_{31}NO_2S_2$
156788	$C_6H_{16}N_2S$	157087	$C_{14}H_{29}NO_2S_2$
156789	$C_8H_{20}N_2S$	157088	$C_{14}H_{29}NO_2S_2$
156790	$C_8H_{12}O_4S_2$	157091	$C_{10}H_{26}N_4S_3$
156791	$C_8H_{12}O_5S_2$	157092	$C_9H_{18}OS_3$
156792	$C_9H_{22}N_2S$	157094	$C_9H_{20}N_2OS$
156793	$C_{10}H_{19}N_2O_3PS_2$	157095	$C_9H_{19}NOS_2$
156794	$C_{11}H_{20}N_3O_3PS$	157097	$C_8H_{17}NO_2S_2$
156796	$C_{14}H_{25}NOS$	157099	$C_8H_{17}NO_2S$
156803	$C_{10}H_{11}NO_4S_2$	157101	$C_7H_{16}N_2O_2S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
157103	$C_6H_{16}N_6S_6$	158492	$C_8H_{16}N_2O_3S_2$
157104	$C_6H_{14}N_2O_2S_2$	158493	$C_{13}H_{30}NO_3PS_2$
157105	$C_6H_{13}NO_2S_2$	158494	$C_{14}H_{29}NOS$
157106	$C_6H_{13}NOS_2$	158495	$C_{15}H_{31}NS_2$
157107	$C_6H_{13}NO_2S$	158498	$C_{18}H_{29}ClN_2S_2$
157108	$C_5H_{11}NO_2S_2$	158502	$C_{30}H_{50}N_4S_2$
157112	$C_4H_8O_3S_2$	158924	$C_{11}H_{22}N_4O_2S_3$
157113	$C_2H_7NO_3S_3$	158925	$C_{11}H_{15}NOS_3$
157297	$C_{16}H_{24}N_2O_4S_4$	158927	$C_3H_6O_3S$
157298	$C_{32}H_{56}N_2O_4S_4$	159080	$C_{13}H_{28}N_2S_3$
157310	$C_{11}H_{15}IN_2S_2$	159083	$C_{16}H_{17}NO_2S$
157311	$C_{13}H_{27}NS_2$	159086	$C_{17}H_{38}N_2O_4SS_1$
157312	$C_{14}H_{29}NS_2$	159087	$C_9H_{20}N_2S_3$
157402	$C_9H_{22}NO_4PS$	159088	$C_{30}H_{28}N_2O_2S_2$
157408	$C_7H_{17}NO_4S_2$	159089	$C_9H_{20}N_2S_2$
157448	$C_{15}H_{28}N_2S$	159090	$C_7H_{15}NOS_2$
157529	$C_6H_{16}N_2S$	159092	$C_9H_{13}NOS_2$
157736	$C_4H_9NO_3S_2$	159094	$C_6H_{13}NO_2S$
157798	$C_{12}H_{20}N_2O_3S_2$	159095	$C_6H_{13}NO_2S$
157799	$C_{15}H_{26}N_2O_3S_2$	159096	$C_5H_{12}N_2S_3$
157841	$C_{13}H_{27}NS_2$	159098	$C_4H_9NOS_3$
157842	$C_{13}H_{29}NO_3S_3$	159240	$C_{24}H_{34}Cl_4N_4O_2S_2$
157843	$C_{11}H_{23}NS_2$	159241	$C_{24}H_{52}N_2S_2$
157868	$C_{17}H_{24}N_2O_5S_2$	159242	$C_{15}H_{26}N_2S$
158490	$C_{15}H_{23}ClN_2S_2$	159243	$C_{15}H_{27}N_2O_3PS$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
159244	$C_{13}H_{29}NO_4S_2$	162457	$C_7H_{13}NO_3S_2$
159245	$C_{12}H_{19}Cl_2N_2O_4PS$	162458	$C_3H_8N_2OS_2$
159246	$C_{12}H_{18}Cl_2N_2OS$	162818	$C_{15}H_{22}Cl_2N_2S_2$
159560	$C_{14}H_{26}N_2O_8S_2$	162857	$C_{16}H_{28}Cl_2N_2S_2$
159562	$C_{13}H_{21}NOS$	162859	$C_9H_{20}N_2S_2$
159567	$C_{11}H_{19}N_3S$	162860	$C_{11}H_{24}N_2S_2$
159568	$C_{11}H_{27}N_2O_3PS$	162862	$C_{12}H_{17}IN_2S_2$
159569	$C_{10}H_{18}N_2S_2$	162863	$C_{14}H_{21}BrN_2S_2$
159570	$C_{10}H_{23}NO_3S_2$	162864	$C_{15}H_{23}BrN_2S_2$
159573	$C_7H_{16}N_2O_2S$	162865	$C_{15}H_{23}IN_2S_2$
159574	$C_{12}H_{17}ClN_2S_2$	162866	$C_{16}H_{25}IN_2S_2$
159618	$C_{12}H_{16}Cl_2N_2S_2$	165159	$C_6H_{11}NO_6S_2$
159619	$C_{12}H_{17}BrN_2S_2$	165556	$C_{13}H_{21}NOS$
159620	$C_{14}H_{21}ClN_2OS$	165560	$C_{14}H_{26}NO_4PS$
159621	$C_{18}H_{29}BrN_2S_2$	165561	$C_{14}H_{25}NO_4S_2$
159742	$C_{12}H_{26}NO_3PS$	165563	$C_{15}H_{28}N_2O_8S_2$
159927	$C_7H_{15}NO_4S$	165569	$C_{17}H_{31}N_3O_4S_2$
159942	$C_{14}H_{24}N_2O_3S_3$	165571	$C_{22}H_{50}N_4S_2$
159945	$C_{10}H_{24}NO_3PS$	165930	$C_9H_{23}N_2O_3PS$
159947	$C_8H_{21}N_2O_4PS$	165931	$C_9H_{21}N_2O_3PS$
160442	$C_{16}H_{25}ClN_2S_2$	165932	$C_{13}H_{19}NO$
160452	$C_{15}H_{26}BrN_2O_4PS$	166717	$C_{12}H_{20}N_2O_3S_2$
162452	$C_{13}H_{28}N_2S_2$	166764	$C_{22}H_{42}N_4S_2$
162455	$C_9H_{17}NO_3S_2$	166817	$C_4H_{10}N_4S_2$
162456	$C_8H_{15}NO_3S_2$	166818	$C_7H_{16}N_2O_3S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
166820	$C_8H_{16}N_2O_3S_2$	169402	$C_{14}H_{27}N_2O_3PS$
166822	$C_6H_{14}N_2O_3S_2$	169403	$C_{28}H_{46}N_4S_4$
166823	$C_{10}H_{22}N_2O_3S_2$	169404	$C_7H_{14}O_3S_2$
166824	$C_{10}H_{21}N_2O_3PS$	169413	$C_{16}H_{33}NO_2S_3$
166825	$C_{10}H_{20}N_2S$	169414	$C_{24}H_{52}N_2S_2Zn$
166826	$C_{11}H_{23}NS_2$	169415	$C_{10}H_{21}NO_2S_3$
166827	$C_{11}H_{23}N_2O_3PS$	169416	$C_9H_{11}NO_2S$
166828	$C_{11}H_{22}N_2O_3S_2$	169417	$C_8H_{17}NO_2S_2$
166829	$C_{11}H_{22}N_2O_3S_2$	169418	$C_7H_{12}N_2S$
166830	$C_{12}H_{25}NS_2$	169419	$C_7H_{15}NO_2S_3$
166831	$C_{12}H_{24}N_2O_4S_2$	169420	$C_6H_{13}NO_2S_3$
166832	$C_{12}H_{20}N_2S$	169422	$C_4H_6O_3S_2$
166834	$C_{12}H_{20}N_2S$	169423	$C_4H_7ClO_2S_2$
166836	$C_{13}H_{27}NS_2$	170427	$C_7H_{19}N_2O_3PS$
166839	$C_{15}H_{24}N_2S_2$	170432	$C_8H_{21}N_2O_3PS$
166840	$C_{15}H_{18}N_2O_2S$	170433	$C_8H_{12}N_2O_5S_3$
166841	$C_{16}H_{30}N_4S_2$	170439	$C_{15}H_{27}N_2O_5PS$
166842	$C_{17}H_{30}N_2O_3S_2$	170440	$C_{15}H_{29}N_2O_3PS$
166843	$C_{18}H_{34}N_4S_2$	170442	$C_{10}H_{15}NO_3S_2$
166847	$C_{22}H_{42}N_4S_2$	170443	$C_{11}H_{20}N_2O_5S_2$
166848	$C_{22}H_{42}N_4S_2$	170447	$C_{17}H_{32}N_3O_4PS$
166849	$C_{24}H_{36}Br_2N_4O_2S_2$	171079	$C_{28}H_{42}N_4S_4$
166850	$C_{30}H_{50}N_4S_2$	171872	$C_{14}H_{26}NO_4PS$
167767	$C_6H_{11}NO_3S_2$	171873	$C_{14}H_{25}NO_4S_2$
168643	$C_8H_{18}O_4S_5$	171888	$C_{12}H_{25}NO_4S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
171889	$C_{12}H_{26}NO_4PS$	176239	$C_9H_{21}N_2O_3PS$
172689	$C_{11}H_{21}N_2O_5PS$	176240	$C_3H_{10}N_3O_3PS$
172729	$C_8H_{18}N_2O_2S$	176241	$C_4H_{12}NO_5PS$
172730	$C_6H_{17}N_2O_4PS$	176252	$C_{16}H_{26}N_2OS$
173113	$C_5H_{11}NO_2S_3$	176256	$C_8H_{19}N_2O_3PS$
173114	$C_{12}H_{28}N_2S_2Zn$	176353	$C_{14}H_{13}NO_2S$
173116	$C_9H_{19}NO_2S_3$	176357	$C_{13}H_{15}NO_2S$
173120	$C_{24}H_{52}N_2NiS_2$	176358	$C_{12}H_{12}N_2O_2S$
173143	$C_4H_{12}CdCl_4N_2S_2$	176542	$C_6H_{17}N_2O_3PS$
173144	$C_4H_{12}N_2PdS_2$	176543	$C_{10}H_{26}N_2O_8P_2S_2$
173145	$C_{12}H_{21}NS$	176606	$C_{10}H_{11}N_3O_3S_2$
173151	$C_8H_{21}N_2O_3PS$	176610	$C_8H_{10}N_2OS_2$
173312	$C_{16}H_{29}F_3N_2$	176611	$C_8H_{18}N_2O_4S_2$
174432	$C_{16}H_{29}F_3N_2$	176614	$C_7H_7NS_2$
175811	$C_{14}H_{20}N_2O_2S_4$	176615	$C_{12}H_{16}N_6S_2$
175866	$C_{24}H_{36}N_2O_2S_4$	176617	$C_{18}H_{20}N_{10}S_2$
175868	$C_{12}H_{16}N_2O_2S_4$	176620	$C_{17}H_{11}NS_2$
175874	$C_{26}H_{28}N_2O_2S_4$	176623	$C_{12}H_{14}N_2O_3S_2$
175876	$C_{20}H_{32}N_2O_2S_4$	176634	$C_{20}H_{20}N_6S_2$
175877	$C_{20}H_{32}N_2O_2S_2$	176992	$C_{19}H_{26}N_2S_2$
175880	$C_{14}H_{20}N_2O_2S_2$	177471	$C_8H_{17}NO_3S_2$
175881	$C_{12}H_{16}N_2O_2S_2$	177472	$C_8H_{17}NO_3S_2$
176095	$C_{32}H_{68}N_2S_4$	177473	$C_8H_{17}NO_3S_2$
176176	$C_{19}H_{21}ClN_2O_2S$	177474	$C_{12}H_{24}N_2S_2$
176186	$C_8H_{13}NO_5S$	177475	$C_{12}H_{24}N_2O_2S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
177749	$C_{14}H_{30}N_4S_2$	180038	$C_{11}H_{14}N_2O_2S$
177481	$C_{15}H_{32}N_2S_2$	180112	$C_8H_{21}N_2O_3PS$
177577	$C_{12}H_{21}NO_7S_3$	180148	$C_{11}H_{10}NO_6PS$
177581	$C_8H_{12}O_6S_2$	180152	$C_3H_{10}N_3O_3PS$
177641	$C_6H_{11}NO_4S_2$	180548	$C_7H_{13}NS_2$
177644	$C_6H_{13}NO_2S_2$	181159	$C_{10}H_{21}NO_2S_2$
177645	$C_5H_{11}NO_2S_2$	181161	$C_6H_{10}NOPS_3$
177646	$C_5H_{11}NO_2S_2$	181162	$C_{13}H_{20}N_2OS_2$
177647	$C_5H_{11}NO_2S_2$	181182	$C_{14}H_{22}N_2OS_2$
177648	$C_4H_{10}N_2OS_2$	181183	$C_{12}H_{18}N_2OS_2$
177649	$C_4H_9NO_2S_2$	181187	$C_{10}H_{14}N_2S_2$
177664	$C_{11}H_{16}N_2OS_2$	181188	$C_{20}H_{34}N_2S_2$
177665	$C_{11}H_{18}N_2O_4S_2$	181189	$C_{21}H_{36}N_2S_2$
177667	$C_{10}H_{14}N_2OS_2$	181190	$C_7H_{17}N_2O_5PS$
179209	$C_5H_{15}N_2O_3PS$	181192	$C_9H_{12}N_2S_2$
179210	$C_5H_8F_3NOS_2$	181193	$C_9H_{14}NO_2PS_2$
179212	$C_7H_{20}N_2O_7P_2S_2$	181194	$C_8H_{17}NO_2S_2$
179213	$C_{14}H_{25}NS$	181195	$C_7H_{15}NO_2S_2$
179350	$C_{16}H_{18}O_4S_5$	181196	$C_7H_{18}NO_2PS$
179351	$C_{16}H_{26}O_{12}S_5$	181197	$C_6H_{17}N_2O_2PS$
179442	$C_{12}H_{17}NO_3S_3$	181359	$C_5H_{15}N_4O_3PS$
180034	$C_{10}H_{14}N_2OS$	181378	$C_6H_{17}N_4O_3PS$
180035	$C_5H_{12}N_2OS$	181612	$C_{26}H_{42}N_4S_2$
180036	$C_4H_{10}N_2OS$	181630	$C_3H_7NS_2$
180037	$C_{11}H_{16}N_2OS$	181640	$C_{12}H_{18}N_2O_2S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
182141	$C_7H_{19}N_2O_3PS$	186680	$C_{11}H_{15}NO_3S$
182619	$C_4H_{11}NO_3S_2$	186682	$C_{10}H_{13}NO_3S$
183159	$C_{12}H_{30}N_4S_2$	186683	$C_{10}H_{24}NO_2PS_3$
183323	$C_{16}H_{28}NO_2PS_2$	186685	$C_9H_7NO_2S_3$
183324	$C_{15}H_{21}NOS_2$	186686	$C_9H_7NO_2S_2$
183327	$C_{14}H_{18}N_2O_2S_2$	186688	$C_9H_{11}NO_3S$
183328	$C_{13}H_{17}NOS_2$	186689	$C_8H_5NO_2S_2$
183329	$C_{11}H_{13}NOS_2$	186691	$C_8H_{21}N_2O_3PS$
183330	$C_{10}H_{20}N_4S_3$	186692	$C_6H_{17}NO_6S_2$
183331	$C_{10}H_{19}NOS_2$	186693	$C_6H_{16}NO_2PS_3$
183333	$C_9H_{16}N_2O_2S_2$	186697	$C_9H_{11}NO_3S_2$
183334	$C_8H_{15}NOS_2$	187093	$C_6H_{17}N_2O_3PS$
183338	$C_6H_{11}NOS_2$	187094	$C_5H_{15}N_2O_3PS$
183339	$C_6H_{17}NO_6P_2S$	187095	$C_{16}H_{17}NO_3S_3$
183368	$C_{14}H_{28}N_4S_3$	187144	$C_{24}H_{18}O_4S_5$
183370	$C_7H_{13}NOS_2$	188300	$C_{16}H_{15}Cl_2NO_3S_3$
183372	$C_6H_{12}N_4S_3$	188301	$C_{24}H_{14}Cl_4O_4S_5$
183977	$C_7H_{19}N_2O_3PS$	188440	C_4H_9NS
183978	$C_7H_{19}N_4O_3PS$	189165	$C_{16}H_{31}NO_2S_4$
183979	$C_7H_{19}N_4O_3PS$	189169	$C_{14}H_{19}N_3S_3$
184192	$C_{11}H_{27}N_2O_3PS$	189172	$C_{12}H_{15}N_3S_3$
186034	$C_{20}H_{14}O_4S_5$	189174	$C_{11}H_{13}N_3S_3$
186675	$C_{14}H_{16}NPS_3$	189175	$C_{10}H_{11}N_3S_3$
186677	$C_{13}H_{19}NO_3S$	189176	$C_9H_{17}NO_2S_4$
186678	$C_{12}H_{16}N_2O_4S$	189179	$C_7H_{13}NO_2S_4$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
189180	$C_5H_9NO_2S_4$	193692	$C_{10}H_{23}N_2O_3PS$
189196	$C_6H_{11}NO_2S_4$	193701	$C_6H_{16}NO_3PS$
190072	$C_{10}H_{23}N_2O_3PS$	193702	$C_6H_{16}N_2S$
190073	$C_7H_{19}N_2O_4PS$	193704	$C_5H_{14}NO_3PS$
190189	$C_{34}H_{67}NO_2S$	193706	$C_4H_{12}NO_3PS$
190194	$C_{18}H_{37}NOS$	194423	$C_4H_{13}N_2O_3PS$
190204	$C_{13}H_{19}NO_2S$	196264	$C_{28}H_{46}N_4S_2$
190205	$C_{13}H_{21}NO_2S$	196265	$C_{24}H_{38}N_4S_2$
190206	$C_{12}H_{19}NS$	196267	$C_{20}H_{42}N_4S_2$
190219	$C_8H_{19}N_2O_5PS$	197486	$C_{26}H_{26}N_4S_2$
190222	$C_7H_{19}N_4O_3PS$	197487	$C_{24}H_{42}N_4S_2$
190282	C_4H_9NS	197490	$C_{20}H_{38}N_4S_2$
192525	$C_5H_{11}NS$	197494	$C_{16}H_{30}N_4S_2$
192526	$C_5H_{11}NS$	197499	$C_{13}H_{14}N_2O_3S_2$
192564	$C_{24}H_{46}N_4S_2$	197500	$C_{13}H_{14}N_2O_3S_2$
193677	$C_{30}H_{50}N_4S_4$	197511	$C_8H_{16}N_2S$
193678	$C_{28}H_{46}N_4S_4$	197512	$C_8H_{17}NS$
193679	$C_{26}H_{40}N_2O_4S_2$	197516	$C_{20}H_{34}N_4S_2$
193681	$C_{20}H_{38}N_4S_4$	199268	$C_{15}H_{26}N_2O_3S_2$
193682	$C_{18}H_{34}N_4S_2$	199269	$C_{30}H_{50}N_4S_2$
193684	$C_{15}H_{26}N_2O_3S_3$	199270	$C_{28}H_{46}N_4S_2$
193685	$C_{15}H_{21}NO_2S$	199271	$C_{14}H_{24}N_2O_3S_2$
193687	$C_{14}H_{24}N_2O_3S_3$	199275	$C_8H_{21}N_4O_3PS$
193688	$C_{14}H_{18}N_2O_3S$	199616	$C_{16}H_{38}N_8S_2$
193690	$C_{11}H_{13}NO_2S$	199617	$C_{34}H_{58}N_4S_2$

<u>WR No.</u>	<u>Molecular Formula</u>	<u>WR No.</u>	<u>Molecular Formula</u>
199618	$C_{32}H_{54}N_4S_2$	204011	$C_5H_{11}NS$
199631	$C_{16}H_{28}N_2O_3S_2$	204157	$C_{28}H_{50}N_4S_4$
199634	$C_{12}H_{21}N_2O_3PS$	204158	$C_{15}H_{28}N_2O_4S_2$
199737	$C_{26}H_{26}N_4S_2$	204159	$C_{14}H_{26}N_2O_3S_3$
199739	$C_{24}H_{42}N_4S_2$	204163	$C_{24}H_{46}N_4S_4$
199740	$C_{24}H_{46}N_4S_2$	204172	$C_{12}H_{24}N_2O_3S_3$
199746	$C_{18}H_{30}N_4S_2$	206036	$C_4H_9NO_3S_2$
199747	$C_{18}H_{30}N_4S_2$	209449	$C_6H_{12}O_2S_2$
199753	$C_9H_{19}NS_3$		
199755	$C_5H_{11}NS_3$		
199788	$C_{11}H_{20}N_2S$		
199789	$C_7H_{15}NS_3$		
201722	$C_{24}H_{38}N_4S_2$		
201723	$C_{20}H_{38}N_4S_2$		
201724	$C_{16}H_{29}NO_3S_2$		
201725	$C_{36}H_{62}N_4S_2$		
201726	$C_{34}H_{58}N_4S_2$		
201727	$C_{32}H_{54}N_4S_2$		
201728	$C_{28}H_{46}N_4S_2$		
201729	$C_{18}H_{32}N_2O_3S_2$		
201730	$C_{17}H_{30}N_2O_3S_2$		
201731	$C_{16}H_{29}N_2O_3PS$		
203923	$C_9H_{20}N_2O_2S$		
203924	$C_9H_{20}N_2OS$		
203925	$C_8H_{18}N_2OS$		

By Order of the Secretary of the Army

Official:

J. C. PENNINGTON
Major General, United States Army
The Adjutant General

E. C. MEYER
General, United States Army
Chief of Staff