

**UNITED STATES AIR FORCE  
RESEARCH LABORATORY**

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**EFFECTS OF AMMONIUM  
PERCHLORATE EXPOSURE IN  
PREGNANT RATS: A MORPHOMETRIC  
ANALYSIS OF THE THYROID GLAND  
OF RAT PUPS**

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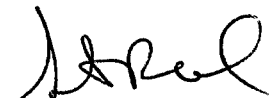
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**FOR THE DIRECTOR**



**STEPHEN R. CHANNEL**, Maj, USAF, BSC  
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## PREFACE

This technical report describes results of the experimental laboratory programs conducted at the Operational Toxicology Branch, Human Effectiveness Directorate, Air Force Research Laboratory (AFRL/HEST), Wright-Patterson Air Force Base, Ohio. This document serves as a final report on the morphometric analysis of the thyroid gland of pups whose dams were exposed to ammonium perchlorate in the drinking water. The research described in this report began in September 1997 and was completed in November 1998 under the Department of Air Force Contract No. F41624-96-C-9010. Maj Stephen R. Channel served as the Contracting Officer's Representative for the U.S. Air Force. Darol E. Dodd, PhD, served as Program Manager for the ManTech/Geo-Centers Joint Venture Contract. This investigation was a subeffort of a Neurobehavioral Developmental Study subcontracted by ManTech to Premedica Argus Research Laboratories, Inc, Horsham, PA. Dr. Ray York of Premedica Argus Research Laboratories served as Study Director for the main study. David R. Mattie, PhD, served as Project Director for the Operational Toxicology Branch. The research was funded by the Air Force Aeronautical Systems Center Environmental Management Directorate (ASC/EM). Invaluable technical assistance in necropsy and histopathology was provided by Ms. Margaret Parish. Capt Kathleen L. MacMahon provided assistance with technical writing and editing.

The animal use described in this study was conducted in accordance with the principles stated in the Guide for the Care and Use of Laboratory Animals, National Research Council, 1996, and the Animal Welfare Act of 1966, as amended.

## ABBREVIATIONS

AFRL	Air Force Research Laboratory
AP	Ammonium perchlorate
DoD	Department of Defense
EPA	Environmental Protection Agency
HEST	Operational Toxicology Branch (of AFRL)
IPSC	Interagency Perchlorate Steering Committee
Kg	Kilogram
LOAEL	Lowest Observable Adverse Effects Level
Mg	Milligram
Mm	Millimeter
M-WRST	Mann-Whitney Rank Sum Test
NCEA	National Center for Environmental Assessment (EPA)
NDS	Neurobehavioral Developmental Study
NH <sub>4</sub> ClO <sub>4</sub>	Ammonium perchlorate
NOAEL	No Observable Adverse Effects Level
ORD	Office of Research and Development (EPA)
PSG	Perchlorate Study Group
RfD	Reference dose
T <sub>3</sub>	Triiodothyronine
T <sub>4</sub>	Thyroxine
TERA	Toxicologic Excellence for Risk Assessment
TRH	Thyrotropin-releasing hormone
TSH	Thyroid stimulating hormone

## SECTION I

### INTRODUCTION

Ammonium perchlorate (AP,  $\text{NH}_4\text{ClO}_4$ ) is a white crystalline solid which is used by the Department of Defense (DoD) as an oxidant in solid propellants for rockets, missiles, and munitions. The production and storage of AP has resulted in contamination of the soil and water of DoD sites (TERA, 1996). The perchlorate anion ( $\text{ClO}_4^-$ ) can persist for many decades under typical groundwater and surface water conditions (Mattie and Jarabek, 1998). The DoD is interested in determining the toxicity of AP as this will determine the extent of remediation of these sites. The toxicology data currently available is missing key information needed to evaluate the potential health effects of perchlorate. The EPA Superfund Technical Support Center issued a provisional reference dose (RfD) for perchlorate in 1992 and revised it in 1995. These provisional RfD values were based on an acute study in humans. An ideal RfD is based on a database that evaluates an array of endpoints that address potential toxicity during critical lifestages, including fetal, adult, and reproductive stages (Mattie and Jarabek, 1998). This study is part of a Neurobehavioral Developmental Study that was initiated in order to address key data gaps in the ammonium perchlorate toxicity database. The data reported here will be used in a new assessment of the toxicity of ammonium perchlorate.

Perchlorate salts affect the functioning of the thyroid-pituitary axis (Capen, *et al.*, 1991). The thyroid gland synthesizes the iodinated hormones thyroxine ( $\text{T}_4$ ) and triiodothyronine ( $\text{T}_3$ ) from their precursor thyroglobulin. The pituitary produces and releases thyroid-stimulating hormone (TSH) which is released when circulating levels of  $\text{T}_3$  and  $\text{T}_4$  decrease. AP affects the functioning of the thyroid gland by competitively inhibiting the uptake of iodide from the blood by the thyroid gland (Goodman and Van Middlesworth, 1980).

Several animal studies have demonstrated the effect of perchlorate on the thyroid and its hormones (Sterner and Mattie, 1998). Brown-Grant (1966) reported that thyroid weights were significantly increased in Wistar rats exposed to 1.0% (246 mg/rat) potassium perchlorate in the drinking water on days 2 through 8 of gestation. Thyroid weights of dams and their litters were significantly increased compared to potassium chloride exposed controls in Wistar dams administered an extremely high dose of 2440 mg/kg (615 mg/rat) potassium perchlorate in the drinking water during gestation (Brown-Grant and Sherwood, 1971). Suckling Wistar rats were made iodine deficient by dam exposure to 1.23 g/L sodium perchlorate in the drinking water from birth through day 10 after birth (Zeghal *et al.*,

1992, 1998). Pharmacokinetic modelling of the plasma, thyroid, and skin in these rats demonstrated decreased plasma iodide concentrations compared to controls, increased iodide uptake by the thyroid, and decreased skin iodide uptake. Golstein *et al.*, 1988, noted histopathologic changes of the thyroid consisting of hyperplasia and decreased follicular luminal colloid. In the same study T<sub>4</sub> and T<sub>3</sub> levels were decreased in treated rats; TSH levels were high. Other studies as well have noted that exposure to perchlorate salts results in decreased serum levels of T<sub>3</sub> and T<sub>4</sub> and an increased level of TSH (Mannisto *et al.*, 1979, King, 1995). In rats, increased TSH levels stimulate the thyroid gland leading to an increase in thyroid weight and size, due to an increase in the number of follicular cells per gland or hyperplasia. In the rat these proliferative lesions may proceed to the development of neoplasias (Capen, 1997). The rat thyroid is more sensitive in this regard to chronic stimulation than the human thyroid (Capen, 1992).

Only two studies have reported a dose-response effect of perchlorate on the thyroid-pituitary axis. Mannisto *et al.* (1979) reported perturbations in T<sub>3</sub>, T<sub>4</sub>, and TSH levels in males Sprague-Dawley rats administered perchlorate in the drinking water for 4 days at concentrations ranging from 0 to 500 mg/L. Caldwell *et al.* (1996) administered ammonium perchlorate in the drinking water at concentrations ranging from 0 to 250 mg/L to Sprague-Dawley rats for 14 days. Thyroglobulin and TSH levels were increased; T<sub>3</sub> decreased. Additional data demonstrating a dose-response relationship between perchlorate dose and effect on the thyroid-pituitary axis is necessary to provide a solid database for perchlorate RfD development.

This study reports a morphometric analysis of the thyroid glands of 5-day-old and 90-day-old rat pups whose dams were exposed to ammonium perchlorate. These data are part of the Neurobehavioral Developmental Study performed as one of the studies recommended by an external peer review of experts to address the key data gaps in the ammonium perchlorate literature. The Neurobehavioral Developmental Study evaluated the nervous system of fetal, newborn and young rats to identify a potentially critical effect and subpopulation. The objective of this study, along with the others recommended, is to provide a comprehensive database on which to develop a robust reference dose (RfD). This new data will be evaluated by the National Center for Environmental Assessment (NCEA) in the Office of Research and Development (ORD) of the Environmental Protection Agency (EPA) in order to issue a new assessment of ammonium perchlorate.

## SECTION II

### MATERIALS AND METHODS

The following are final results of two separate morphometric studies assessing thyroid follicle lumen size in 5-day old and 81 to 86-day old Sprague-Dawley (CrI:CD®BRVAF/Plus®) rat pups born to dams exposed to a daily oral intake of 10, 3, 1, 0.1, or 0 mg/kg of ammonium perchlorate in a neurobehavioral development study performed by Argus Laboratories (Argus 1613-002). The animals in these studies were litter mates, the 5-day old pups representing pups culled from litters in preparation for the 81-day post natal evaluation. These 5-day old pups had been exposed to test agent during the entire gestational period and may have received exposure to variable quantities of AP through ingestion of their mother's milk for the 5 days prior to culling. The rats in the post natal evaluation cohort were observed for a 81-day recovery period. During the first ten days of this period dams continued to be dosed with AP in their drinking water. Therefore, the pups of the 81-day recovery group received further exposure to the test agent through day 10 of lactation. Thyroid samples were collected by Argus Laboratories at culling and at the termination of the 81-day observation period. Samples were fixed in 10% neutral buffered formalin, and shipped to the Operational Toxicology Branch of the Air Force Research Laboratory (AFRL/HEST). Selection of thyroids for examination was accomplished by randomizing the samples from each treatment group using a computer program for randomization. Separate randomization was done for selection of males and females. A translation table is provided in Table A-1 in order to relate AFRL/HEST identification numbers to those of Argus Laboratories. Designs for both studies are described in Table 1.

**TABLE 1. THYROID MORPHOMETRIC STUDY DESIGN.  
AMMONIUM PERCHLORATE EXPOSURE IN 5-DAY OLD AND 81-DAY OLD RATS**

GROUP	DOSE (mg/kg/day)	NUMBER OF ANIMALS	
		MALES	FEMALES
1	10.0	10	10
2	3.0	10	10
3	1.0	10	10
4	0.1	10	10
5	0	10	10

## **Morphometry**

From each thyroid, three histological sections were taken, mounted on glass slides, and stained with hematoxylin eosin. In a blinded study, follicle counts and follicle lumen area determinations were done in one 40x field for each of three separate sections of thyroid per animal. A Leica Quantimet 570C Image Analysis System was used with an Olympus Light Microscope fitted with a Sony (DXC-760MD) CCD camera. The system was calibrated using an American Optical 0.02mm calibration scale. The image of each 40x field was captured and processed for follicle count and lumen area determination. The mean thyroid follicular lumen area represents the mean area of all follicular lumens measured from the three histological sections sampled from each rat and is expressed in  $\mu\text{m}^2$ . Follicle lumen area was selected as the end point for these studies because of the ease of detection of this region in digitized images. Ease of detection was a function of the distinct contrast of the colloid region with the surrounding follicular epithelium and limited interstitial regions. Due to normal variations in thyroid microscopic anatomy, i.e. variably shaped and sized follicles, the number of follicles sampled per section (per 40x field) per individual was not equal.

## **Statistical Analysis**

Data were analyzed using the t-test or Mann-Whitney Rank Sum Test (M-WRST) and a One Way Analysis of Variance using SigmaStat<sup>®</sup> by Jandel Scientific.

## SECTION III

### RESULTS

The mean follicular lumen areas for all treatment groups from both studies are presented in Tables 2 and 3. The raw data of area measurements and mean follicular counts per animal by group and sex are reported in Appendix A.

At the levels of exposure used in this current study, a dose-response relationship was apparent for 5-day old male and female pups (Table 2 & Figs. 1-3). The observations in females generated a smooth dose-response curve demonstrating a significant decrease in follicular lumen size in the high dose group (10 mg/kg) when compared to controls ( $P = 0.0291$ ). The graphic tracing of responses in males was not optimum. Although a dose-response was evident, there were notably larger follicular lumens in the 1 mg/kg dose group that did not differ in size from controls. Other dose groups, however, demonstrated a significant decrease in follicular lumen size compared to controls with  $P$  values of 0.0077, 0.0001, and 0.0015 for the 0.1, 3, and 10 mg/kg groups, respectively. Values at these three dose levels generate a dose-response curve that parallel the response noted in the female pups. There was no statistical difference in follicle lumen sizes between the males and females within dose groups in the 5-day old rat pups (all  $P$  values  $> 0.4949$ ).

As noted above, at 5 days of age, female and male litter mates demonstrated a dose-response related decrease in the size of thyroid follicles lumens. The recovery cohort, however, after 81 days withdrawal from agent exposure, showed no significant differences between dosage groups and controls for the females or males (Table 3 & Figs. 4-6). Follicle lumen sizes between the males and females by dose group demonstrated no significant difference except at the 1 and 10 mg/kg dose levels where the female follicular lumens were significantly larger than those of the males ( $P = 0.0091$  and 0.0312, respectively).

**TABLE 2. MEAN FOLLICULAR LUMEN AREA (SQUARE MICROMETERS)  
5-DAY OLD PUP STUDY**

<b>DOSE (MG/KG/DAY)</b>	<b>MALES</b>	<b>FEMALES</b>
0	315.00 $\pm$ 50.45 <sup>a</sup>	320.66 $\pm$ 82.56
0.1	255.03 $\pm$ 38.19 <sup>b</sup>	264.70 $\pm$ 63.18
1.0	290.78 $\pm$ 143.21	255.20 $\pm$ 74.69
3.0	208.41 $\pm$ 46.14 <sup>b</sup>	235.59 $\pm$ 132.05
10.0	209.70 $\pm$ 73.77 <sup>b</sup>	211.44 $\pm$ 119.96 <sup>b</sup>

a=mean  $\pm$  standard deviation

b=Significantly different from controls (P < 0.05) based on t-test or M-WRST.

**TABLE 3. MEAN FOLLICULAR LUMEN AREA (SQUARE MICROMETERS)  
81-86-DAY OLD PUP STUDY**

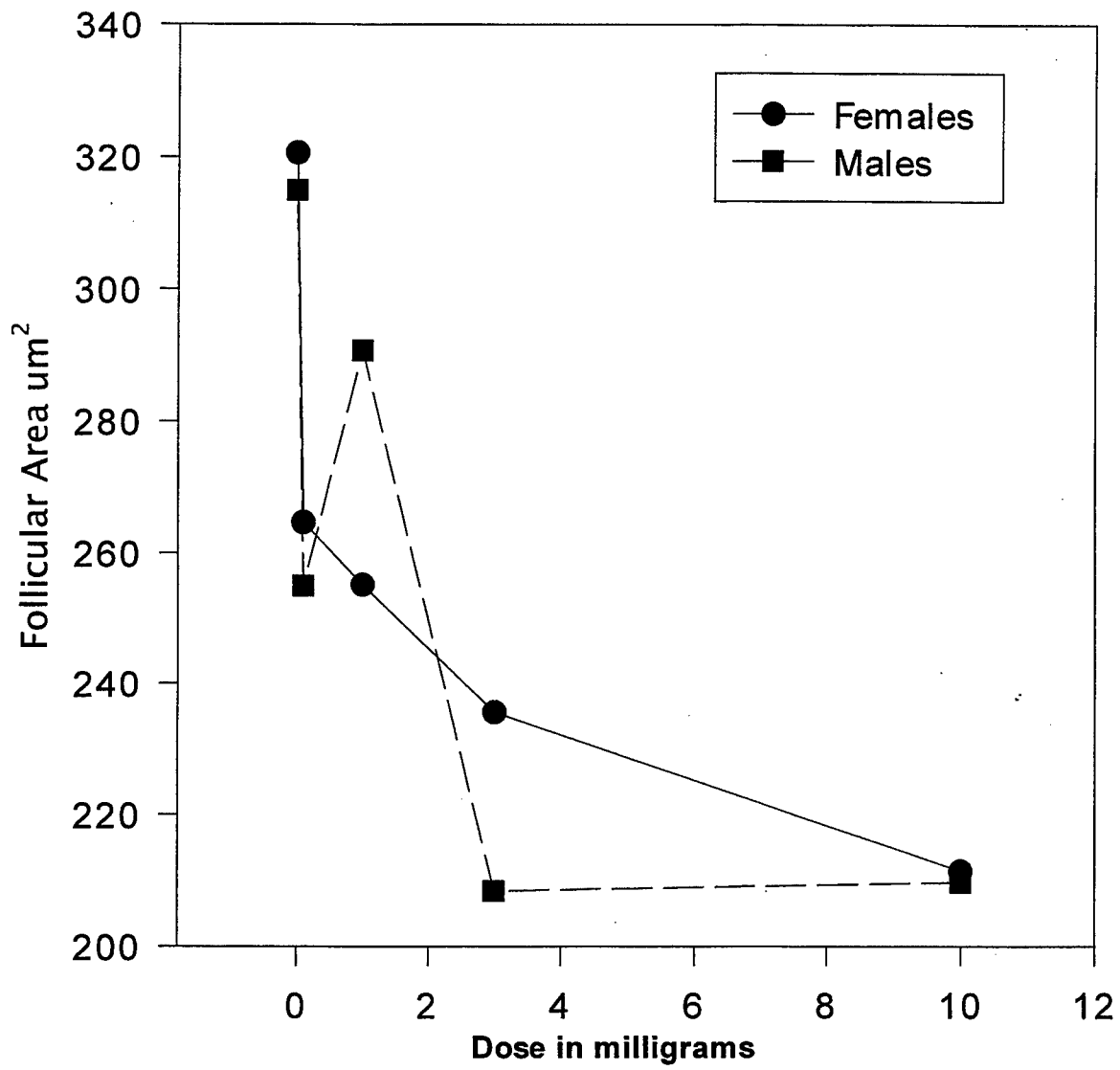
<b>DOSE (MG/KG/DAY)</b>	<b>MALES</b>	<b>FEMALES</b>
0	1274.62 $\pm$ 472.35 <sup>a</sup>	1394.05 $\pm$ 518.86
0.1	963.58 $\pm$ 357.57	1550.31 $\pm$ 726.31
1.0	1014.91 $\pm$ 230.26	1762.03 $\pm$ 784.35 <sup>b</sup>
3.0	911.02 $\pm$ 382.33	1281.35 $\pm$ 612.27
10.0	1199.14 $\pm$ 466.20	1566.51 $\pm$ 450.15 <sup>c</sup>

a=mean  $\pm$  standard deviation

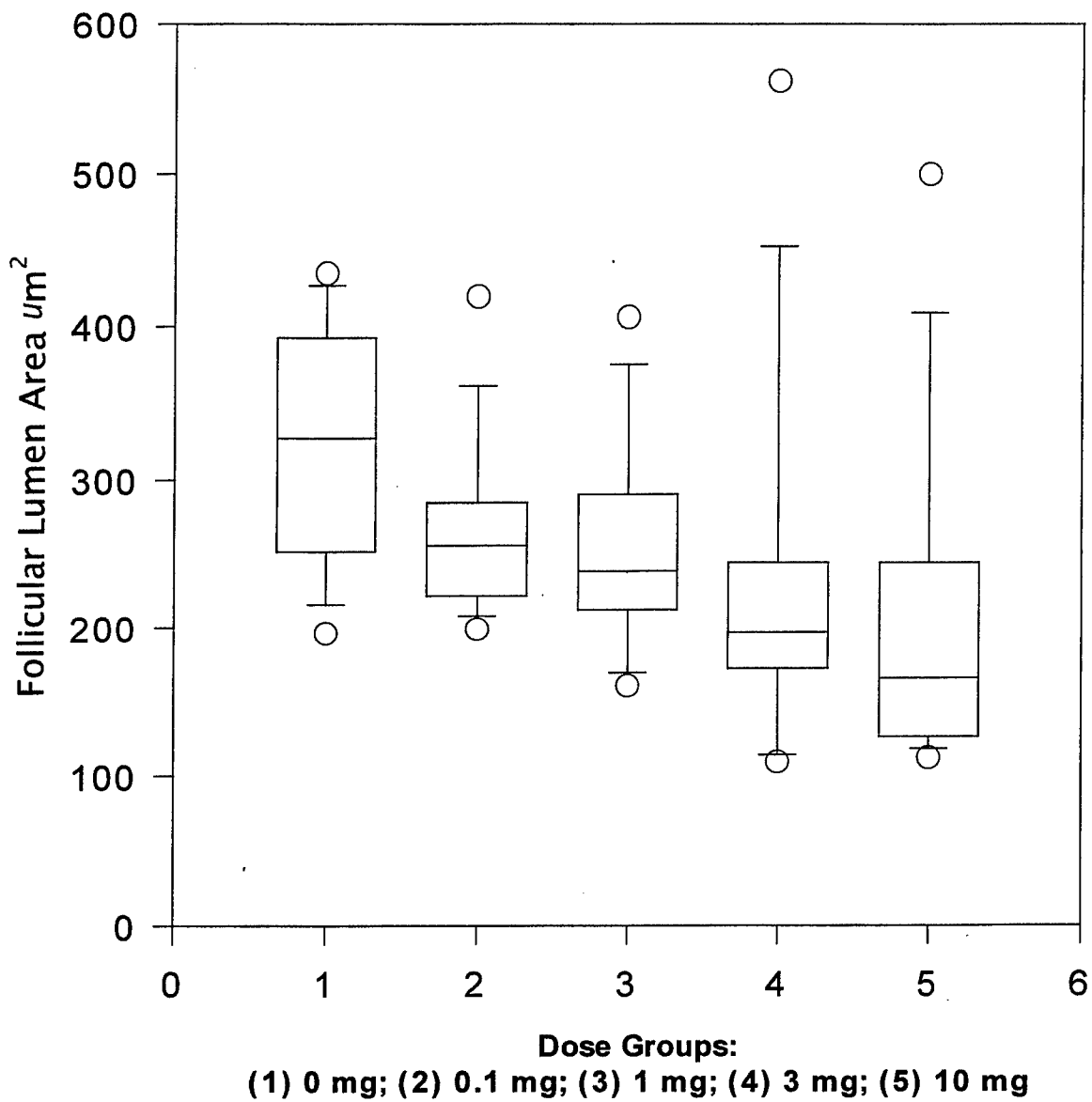
b=Significantly greater than the observation in males at 1 mg/kg (P=0.0091) based on t-test or M-WRST.

c=Significantly greater than the observation in males at 10 mg/kg (P=0.0312) based on t-test or M-WRST.

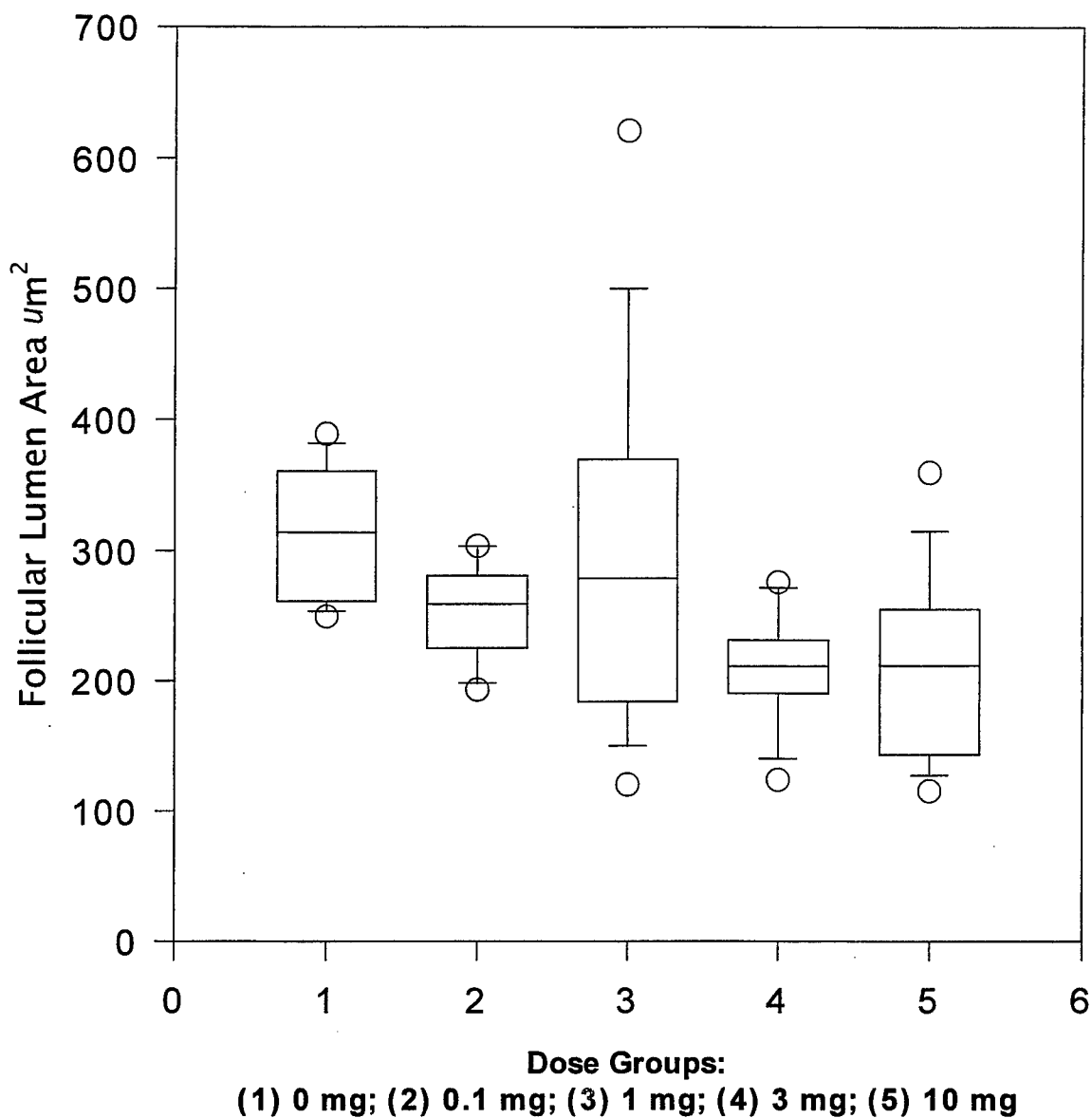




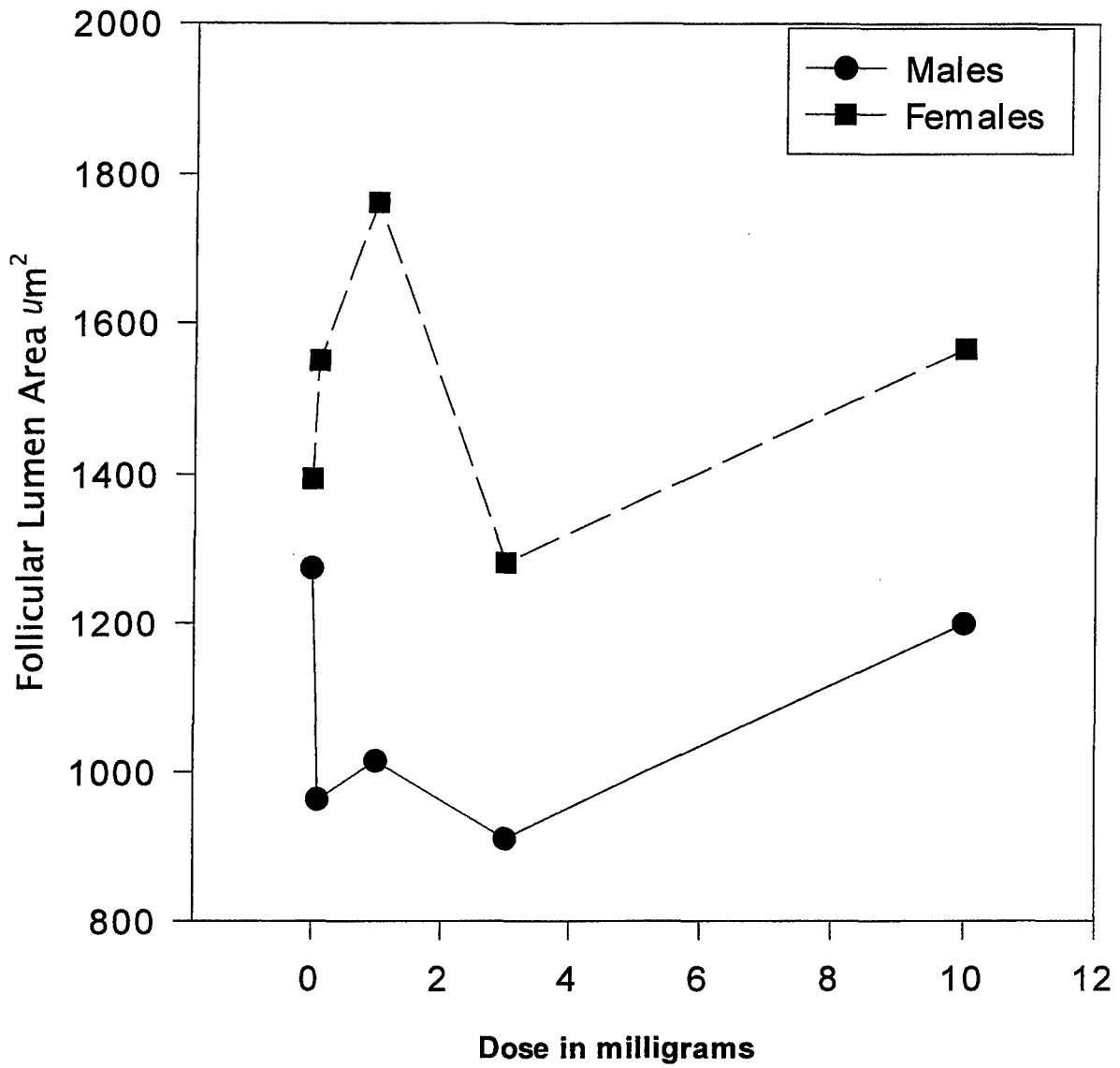
**Figure 1. Thyroid Follicular Lumen Area.  
5-Day Old Rat Pups.**



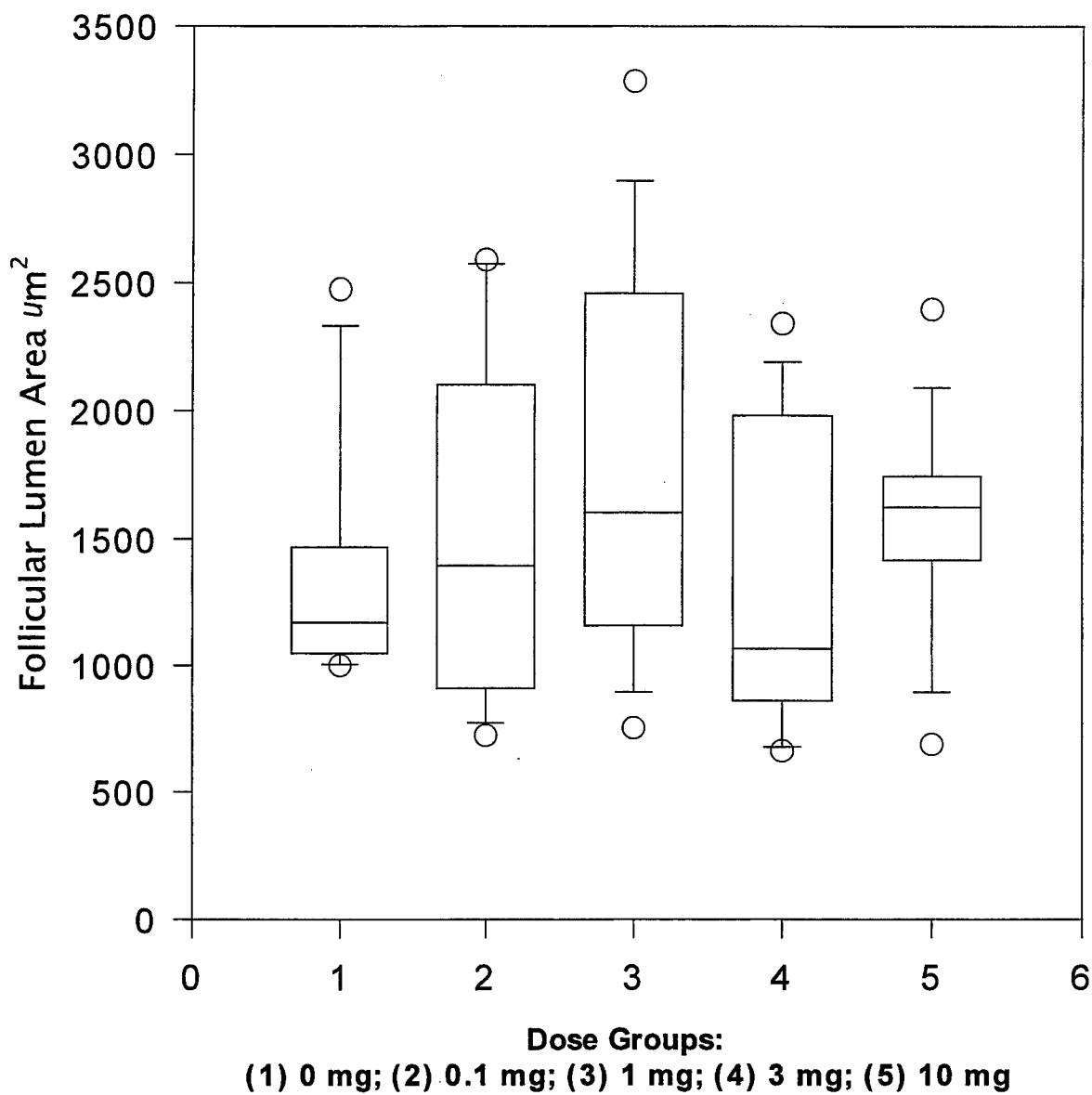
**Figure 2. Mean Thyroid Follicular Lumen Area.  
Females; 5-Day Old Rat Pups.**



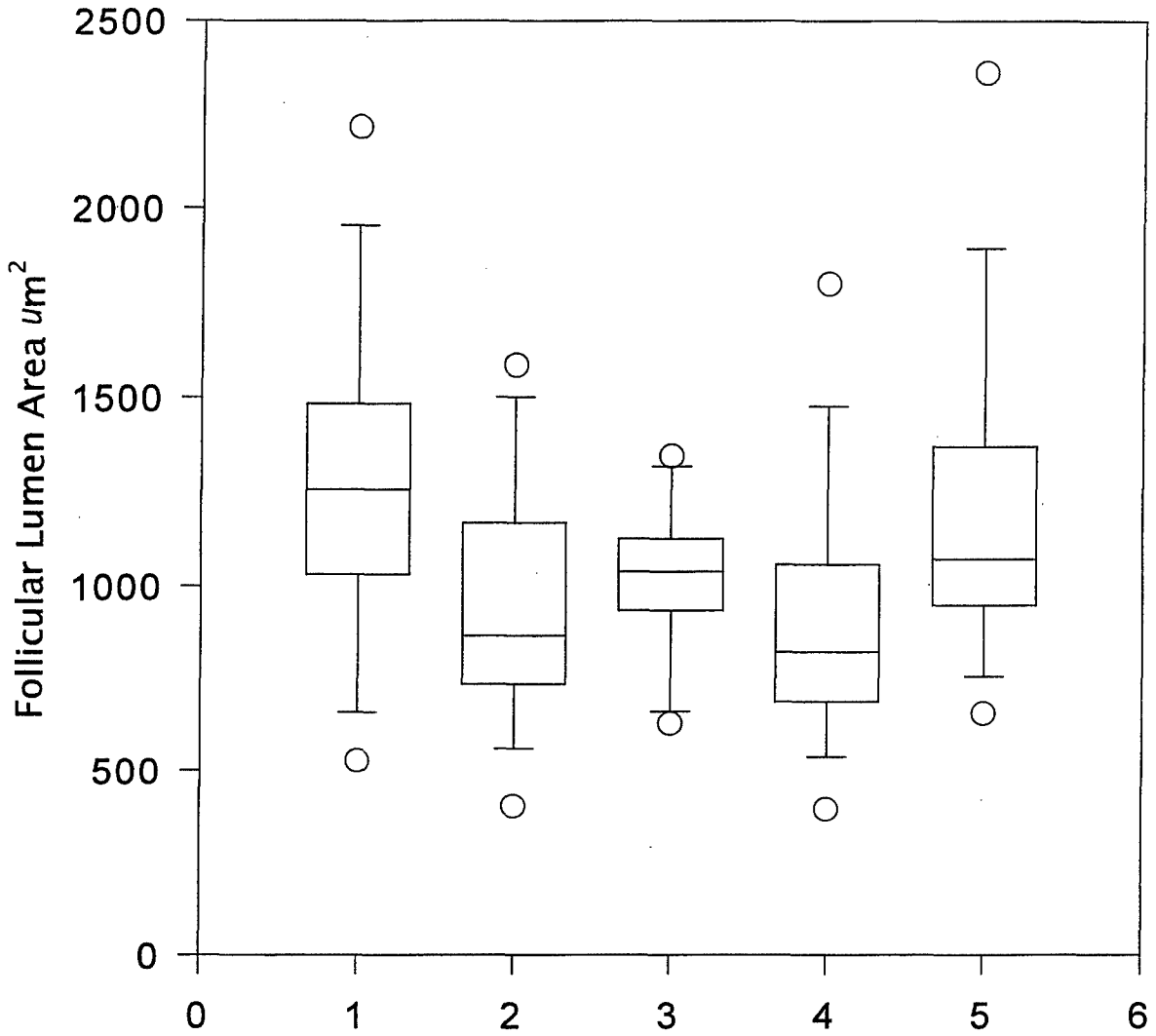
**Figure 3. Mean Thyroid Follicular Lumen Area. Males; 5-Day Old Rat Pups.**



**Figure 4. Thyroid Follicular Lumen Area.  
81-86-Day Old Rats.**



**Figure 5. Mean Thyroid Follicular Lumen Area.  
Female 81-86-Day Old Rats.**



**Dose Groups:**  
**(1) 0 mg; (2) 0.1 mg; (3) 1 mg; (4) 3 mg; (5) 10 mg**

**Figure 6. Mean Thyroid Follicular Lumen Area.  
Male 81-86-Day Old Rats.**

## SECTION IV

### DISCUSSION

The greatest hindrance to date in characterizing potential risks posed by perchlorate contamination of ground water has been the paucity of reliable toxicology data. Through efforts of the Perchlorate Study Group (PSG), Toxicologic Excellence for Risk Assessment (TERA), and the Interagency Perchlorate Steering Committee (IPSC) advancements have been made toward refining a RfD for perchlorates. Through interactions of the above groups, recommendations for a set of studies have been developed to address key data gaps. Of eight new studies recommended, a neurobehavioral developmental study (NDS) was included to evaluate the nervous system of fetal, newborn and young rats to identify potentially critical effects and sensitive subpopulations. Such a study is appropriate not only for the fact that perchlorates directly effect thyroid function, but because thyroid hormone is a critical mediator of central nervous system development (Thompson and Bottcher, 1997). Although not originally programed into the NDS, our thyroid investigation is a by-product of that study.

In our current study we assessed the effects of continuous low level exposures of ammonium perchlorate on the target organ, the thyroid, in a very sensitive subpopulation, the developing fetus. Five days after parturition, litters were culled for litter-size standardization in the NDS, and thyroids from the culled pups were collected and processed for histopathologic and morphometric assessment. Additionally, we were able to assess thyroid recovery in the cohort of litter mates maintained for 81 days postpartum on the NDS during which time ammonium perchlorate exposure was withdrawn 10 days postpartum.

Agents affecting thyroid toxicity may do so by direct and indirect mechanisms. The direct effects include inhibition of thyroid hormone synthesis (blockage of iodine uptake and inhibition of thyroid peroxidase) and inhibition of thyroid hormone secretion. Indirect effects are operative on the peripheral metabolism of thyroid hormones (Capen *et al.*, 1991). Perchlorates directly inhibit iodide transport thus rendering an iodine deficient state with inhibition of hormone synthesis. Under these conditions, circulating levels of thyroid hormones, T<sub>3</sub> and T<sub>4</sub>, decrease in plasma. This perturbation in hormone levels triggers release of thyrotropin-releasing hormone (TRH) in the hypothalamus which stimulates continued release of thyroid stimulating hormone (TSH) from the anterior pituitary. The thyroid responds morphologically to elevated TSH levels with an increase in follicular cell height and a decrease in follicular lumen size due to reduction in the amount of colloid. In this study we monitored these microanatomic end points in assessing the male and female rat pups' response to gestation-long exposure to ammonium perchlorate.

At the levels of maternal exposure used in this study, a dose-response relationship was apparent in 5-day old male and female pups (Fig. 1). Female responses formed a smooth dose-response curve demonstrating decreasing follicular lumen sizes at each increasing dose level with a significant difference at the highest dose (10mg/kg). Most observations in males paralleled those of the females and were consistently lower excluding the observation at 1 mg/kg dose level. There were no significant differences, however, between the male and female observations at any dose level. All male observations were significantly lower than controls except at the 1 mg/kg dose. The presence of an outlying observation is the explanation offered for the disparity in the 1 mg/kg group response, evident in the large standard deviation (see Table 2 and Fig. 3). The mean follicular area for that observation was greater than 2 standard deviations above the group mean. Partial explanation for this disparity rests in the fact that the histologic preparations for this sample displayed numerous follicles interpreted as peripheral follicles which are typically widely dilated and considered to be relatively functionally dormant. Considering this fact, additional step sections were cut from the remaining sample and three representative sections were reassessed morphometrically. The mean follicular lumen area for the reassessed sections was  $326.27 \pm 255.19 \mu\text{m}^2$ , approximately half of the original observation. Deletion of the aberrant observation or incorporation of the reassessed mean would render a group mean of  $254.04 \pm 88.80 \mu\text{m}^2$  or  $261.26 \pm 86.77 \mu\text{m}^2$ , respectively, figures comparable to the response observed in females at this dose level. Although a group mean more in line with expectations is achieved by discounting or reassessing this one observation, the difference of either of these new means from controls would still not be statistically significant.

These data will be used to generate an estimate of risk of exposure in the form of a RfD. A RfD may be generated using a several methods, one of which employs the no observable adverse effect level (NOAEL) in its calculation. Based on observations noted in the males a NOAEL of 1 mg/kg-day and a lowest observable adverse effect level (LOAEL) of 3 mg/kg-day may be selected as working figures. These estimates are comparable to the short-term exposure thyroid data of Mannisto *et al.* (1979)(TERA, 1996). Their data, based on dosing Sprague-Dawley rats at estimated dosages of 0, 1.5, 7.6, 15.3, and 76.3 mg/kg-day, support a NOAEL of 1.5 and a LOAEL of 7.6 mg/kg-day. However, selection of 1 mg/kg in our study as the NOAEL ignores the fact that there is a significant difference in the 0.1 mg/kg group and controls. If we judge the results at 1 mg/kg in males with an elevated mean and large variance to be anomalous, as presented above, our study would yield a LOAEL of 0.1 mg/kg, a figure in close agreement with the findings of Caldwell *et al.* (1996)(TERA, 1996). Caldwell and colleagues monitored TSH and T<sub>3</sub> levels in male and female Sprague-Dawley rats in response to ammonium perchlorate doses comparable to those of our study. A LOAEL of 0.12 mg/kg-day in females was developed from these data. Under these circumstances an RfD could still be obtained by using the LOAEL or by calculating a benchmark dose using the dose response curves generated in this study.



Results of the 81-86-day recovery cohort demonstrated that the change in thyroid follicular lumen size observed in the new born rat pups is reversible with time. There were no significant differences in lumen sizes between any dose level and controls for males or females. The biological significance of female follicle lumens being larger than males at the 1 and 10 mg/kg dose groups is not apparent at this time.

## SECTION V

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**APPENDIX A**  
**DATA TABLES**

**TABLE A-1. TRANSLATION TABLE OF IDENTIFICATION NUMBERS**  
**Left Column Argus Lab Designation**  
**Right Column Wright-Patterson Accession Number**

**25F - 5-Day Old Pups**

**FEMALES**

Control		0.1 mg/kg		1.0mg/kg		3.0 mg/kg		10mg/kg	
19558	B102-98	19511	B085-98	19567	B078-98	19525	B068-98	19529	B058-98
19523	B096-98	19527	B087-98	19587	B079-98	19557	B070-98	19532	B066-98
19549	B097-98	19533	B088-98	19588	B080-98	19573	B071-98	19551	B059-98
19571	B098-98	19534	B089-98	19592	B081-98	19612	B072-98	19564	B061-98
19608	B099-98	19602	B093-98	19596	B082-98	19622	B073-98	19591	B064-98
19621	B101-98	19609	B094-98	19597	B083-98	19623	B074-98	19601	B065-98
<b>19526</b>	<b>382-98 *</b>	<b>19501</b>	<b>365-98 *</b>	<b>19538</b>	<b>353-94 *</b>	<b>19522</b>	<b>338-98 *</b>	<b>19502</b>	<b>323-98</b>
<b>19561</b>	<b>385-98 *</b>	<b>19536</b>	<b>369-98 *</b>	<b>19579</b>	<b>358-98 *</b>	<b>19569</b>	<b>342-98 *</b>	<b>19512</b>	<b>324-98</b>
<b>19582</b>	<b>388-98 *</b>	<b>19566</b>	<b>371-98 *</b>	<b>19603</b>	<b>362-98 *</b>	<b>19581</b>	<b>344-98 *</b>	<b>19543</b>	<b>327-98</b>
<b>19610</b>	<b>390-98 *</b>	<b>19594</b>	<b>374-98 *</b>	<b>19616</b>	<b>364-98 *</b>	<b>19623</b>	<b>350-98 *</b>	<b>19595</b>	<b>334-98</b>

**MALES**

Control		0.1 mg/kg		1.0mg/kg		3.0 mg/kg		10mg/kg	
19519	A095-98	19511	A085-98	19504	A075-98	19506	A067-98	19528	A057-98
19523	A096-98	19514	A086-98	19521	A076-98	19525	A068-98	19529	A058-98
19549	A097-98	19527	A087-98	19539	A077-98	19554	A069-98	19560	A060-98
19571	A098-98	19576	A090-98	19588	A080-98	19573	A071-98	19572	A062-98
19610	A100-98	19594	A091-98	19596	A082-98	19612	A072-98	19574	A063-98
19621	A101-98	19599	A092-98	19607	A084-98	19623	A074-98	19601	A065-98
<b>19558</b>	<b>309-98 *</b>	<b>19533</b>	<b>297-98 *</b>	<b>19555</b>	<b>282-98 *</b>	<b>19545</b>	<b>270-98 *</b>	<b>19502</b>	<b>253-98</b>
<b>19526</b>	<b>314-98 *</b>	<b>19566</b>	<b>301-98 *</b>	<b>19579</b>	<b>286-98 *</b>	<b>19569</b>	<b>273-98 *</b>	<b>19541</b>	<b>257-98</b>
<b>19561</b>	<b>317-98 *</b>	<b>19590</b>	<b>303-98 *</b>	<b>19586</b>	<b>288-98 *</b>	<b>19617</b>	<b>278-98 *</b>	<b>19546</b>	<b>259-98</b>
<b>19585</b>	<b>321-98 *</b>	<b>19605</b>	<b>306-98 *</b>	<b>19603</b>	<b>293-98 *</b>	<b>19622</b>	<b>280-98 *</b>	<b>19613</b>	<b>265-98</b>

**TABLE A-1 (CONTINUED). TRANSLATION TABLE OF IDENTIFICATION NUMBERS.****Left Column Argus Lab Designation****Right Column Wright-Patterson Accession Number****25F - PND-81-86****FEMALES**

Control		0.1 mg/kg		1.0mg/kg		3.0 mg/kg		10mg/kg	
1808	178-98	1818	184-98	1815	190-98	1819	196-98	1843	202-98
1822	179-98	1846	185-98	1821	191-98	1832	197-98	1848	203-98
1862	180-98	1856	186-98	1825	192-98	1864	198-98	1866	204-98
1877	181-98	1863	187-98	1844	193-98	1874	199-98	1878	205-98
1894	182-98	1869	188-98	1849	194-98	1876	200-98	1893	206-98
1896	183-98	1871	189-98	1861	195-98	1897	201-98	1898	207-98
<b>1836</b>	<b>536-98</b>	<b>1805</b>	<b>540-98</b>	<b>1816</b>	<b>544-98</b>	<b>1807</b>	<b>548-98</b>	<b>1810</b>	<b>552-98</b>
<b>1857</b>	<b>537-98</b>	<b>1855</b>	<b>541-98</b>	<b>1830</b>	<b>545-98</b>	<b>1829</b>	<b>549-98</b>	<b>1824</b>	<b>553-98</b>
<b>1870</b>	<b>538-98</b>	<b>1882</b>	<b>542-98</b>	<b>1880</b>	<b>546-98</b>	<b>1845</b>	<b>550-98</b>	<b>1840</b>	<b>554-98</b>
<b>1885</b>	<b>539-98</b>	<b>1895</b>	<b>543-98</b>	<b>1892</b>	<b>547-98</b>	<b>1865</b>	<b>551-98</b>	<b>1852</b>	<b>555-98</b>

**MALES**

Control		0.1 mg/kg		1.0mg/kg		3.0 mg/kg		10mg/kg	
1531	148-98	1575	154-98	1503	160-98	1501	166-98	1527	172-98
1547	149-98	1506	155-98	1517	161-98	1526	167-98	1552	173-98
1567	150-98	1511	156-98	1542	162-98	1533	168-98	1573	174-98
1568	151-98	1555	157-98	1554	163-98	1539	169-98	1584	175-98
1570	152-98	1556	158-98	1558	164-98	1574	170-98	1593	176-98
1577	153-98	1569	159-98	1561	165-98	1587	171-98	1594	177-98
<b>1508</b>	<b>516-98</b>	<b>1513</b>	<b>520-98</b>	<b>1509</b>	<b>524-98</b>	<b>1507</b>	<b>528-98</b>	<b>1510</b>	<b>532-98</b>
<b>1562</b>	<b>517-98</b>	<b>1546</b>	<b>521-98</b>	<b>1535</b>	<b>525-98</b>	<b>1532</b>	<b>529-98</b>	<b>1524</b>	<b>533-98</b>
<b>1586</b>	<b>518-98</b>	<b>1563</b>	<b>522-98</b>	<b>1549</b>	<b>526-98</b>	<b>1551</b>	<b>530-98</b>	<b>1543</b>	<b>534-98</b>
<b>1596</b>	<b>519-98</b>	<b>1582</b>	<b>523-98</b>	<b>1591</b>	<b>527-98</b>	<b>1565</b>	<b>531-98</b>	<b>1578</b>	<b>535-98</b>

**TABLE A-2. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 1 FEMALE RAW DATA: AP 10.0 MG/KG/DAY.**

58B	59B	61B	64B	65B	66B	323	324	327	334
533.49	331.20	283.12	107.25	203.66	196.42	26.64	89.17	32.05	218.94
126.17	133.55	396.53	105.19	249.10	317.64	30.39	204.22	169.41	290.95
422.33	243.67	513.64	147.52	339.16	336.13	83.25	121.63	188.97	63.68
1120.13	343.94	476.25	119.99	169.58	74.79	134.86	138.89	38.71	53.28
683.19	500.90	276.55	144.64	326.99	198.47	86.58	140.94	36.63	163.58
279.12	160.67	311.06	385.85	1003.29	165.19	101.15	88.76	270.97	218.52
564.32	370.64	387.90	139.30	430.44	122.45	82.41	71.91	27.89	322.58
369.18	380.92	46.43	90.81	348.90	118.34	48.70	111.36	122.79	78.25
2269.87	227.65	21.37	119.58	181.35	47.26	152.76	112.59	32.88	70.76
223.13	637.74	250.66	349.28	217.86	73.14	152.76	159.44	81.17	147.76
263.70	215.32	410.09	52.60	335.92	183.68	150.68	113.82	70.34	130.70
430.44	345.99	170.12	303.25	184.19	95.33	117.38	58.35	259.73	89.91
464.93	245.73	386.26	131.90	431.66	164.37	59.94	372.29	23.73	156.09
521.32	292.16	317.23	139.30	320.50	69.86	172.74	397.35	45.37	57.86
384.19	130.67	343.11	624.18	223.94	66.98	143.18	99.85	22.89	115.71
211.77	249.84	70.27	323.39	162.68	92.87	41.21	80.54	89.49	115.30
256.81	324.21	357.08	50.54	445.05	48.08	185.22	27.12	149.84	146.93
1113.64	670.61	286.82	216.96	466.15	43.97	93.24	63.69	116.96	182.31
418.68	502.14	97.39	112.18	368.78	32.87	77.00	66.57	76.59	287.20
286.83	290.52	149.98	92.87	378.92	27.94	63.68	67.80	141.52	163.16
534.30	412.97	592.54	141.77	253.56	82.18	159.83	70.68	218.52	57.86
204.47	168.48	417.49	462.28	204.88	45.61	91.16	38.22	49.95	48.70
145.65	300.38	219.43	215.73	130.23	87.94	31.22	210.39	91.57	199.38
171.61	249.01	48.90	92.87	136.31	148.75	47.87	120.40	39.96	298.02
1362.73	246.55	283.53	415.02	290.07	49.72	161.08	41.50	84.50	334.65
382.98	262.57	189.02	176.28	363.50	66.57	69.51	313.94	82.83	286.37
535.92	281.48	387.90	124.10	135.50	173.82	181.48	22.60	271.80	321.33
371.21	112.59	286.00	348.87	146.05	41.09	101.15	274.49	67.43	353.80
702.67	483.24	153.27	194.77	140.37	78.90	178.56	173.00	71.59	280.96
481.97	446.66	372.70	241.21	184.19	25.07	197.29	179.16	153.17	120.29
197.17	297.91	209.98	237.51	46.66	23.01	104.89	97.80	149.01	216.44
147.27	323.39	377.22	601.99	88.85	229.29	64.52	59.99	181.06	235.59

**TABLE A-2 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 1 FEMALE RAW DATA: AP 10.0 MG/KG/DAY.**

660.88	574.05	361.19	258.05	422.74	25.07	140.27	168.89	134.44	181.06
318.88	573.23	591.31	137.25	522.54	85.88	175.23	250.25	157.75	133.20
698.61	228.47	239.56	87.53	264.51	172.58	81.58	97.80	260.98	119.04
469.80	466.39	318.87	72.73	184.19	57.53	192.30	333.25	309.26	50.36
880.36	161.08	159.02	103.14	53.96	152.45	114.05	200.12	225.18	174.40
600.02	120.81	152.45	119.99	195.95	24.66	385.43	166.83	20.40	54.53
335.11	254.77	409.27	219.84	193.11	20.14	307.60	34.93	186.06	124.04
806.12	267.09	229.70	82.59	106.29	216.96	357.54	42.32	181.89	118.63
759.06	236.28	452.01	183.68	124.95	237.51	62.02	78.07	27.47	129.87
357.82	579.80	404.75	258.88	164.71	23.42	278.88	41.91	186.06	398.75
488.05	79.31	520.22	196.42	223.54	129.44	86.16	38.22	70.76	35.80
606.52	352.56	194.77	60.40	288.45	226.82	297.19	86.70	98.65	85.74
264.51	235.87	222.72	318.87	333.89	113.82	19.56	30.00	86.16	250.99
227.60	205.05	115.47	120.81	910.79	103.55	183.56	55.88	19.56	86.16
641.81	262.57	138.89	49.72	242.20	114.23	166.91	104.78	39.13	74.09
2211.85	87.94	352.98	182.45	308.33	249.84	110.30	37.80	299.69	101.98
308.74	304.90	320.10	115.06	417.46	326.68	65.77	32.46	82.00	198.54
582.99	60.82	239.97	174.23	210.15	272.44	48.70	90.40	62.85	161.08
239.36	140.94	344.35	116.29	189.87	131.08	102.39	90.81	35.80	76.17
279.12	193.95	237.10	111.36	362.29	120.81	97.40	81.77	313.42	164.83
245.04	527.61	392.42	121.22	263.70	319.69	95.32	108.48	81.58	61.19
51.93	205.87	415.02	166.42	90.88	147.93	160.25	112.59	81.17	134.44
544.04	198.47	327.91	202.17	280.34	53.83	138.61	157.38	101.56	107.39
663.72	85.06	485.29	110.95	217.86	216.14	94.49	189.02	72.43	38.29
400.42	137.25	310.24	23.42	310.76	216.14	149.84	118.75	89.91	161.50
300.22	60.82	215.32	412.15	324.56	16.03	29.55	94.92	44.54	120.29
548.50	296.27	550.21	37.39	129.01	290.93	109.47	21.37	75.75	80.33
238.14	185.32	420.78	104.78	348.09	129.03	82.41	89.99	79.50	232.26
283.18	133.96	191.90	158.61	137.13	173.41	136.11	17.26	55.78	128.62
574.87	86.29	299.97	130.67	101.42	158.20	122.79	77.66	241.83	131.11
307.11	24.24	73.55	324.62	499.82	58.35	51.20	38.63	71.18	128.20
610.17	131.90	428.58	81.77	79.52	74.79	134.03	30.00	68.68	68.68
599.62	124.51	327.50	363.66	247.07	154.09	62.44	57.53	89.49	345.47
634.10	268.33	220.25	122.45	169.58	45.20	131.53	56.30	161.50	42.46



**TABLE A-2 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 1 FEMALE RAW DATA: AP 10.0 MG/KG/DAY.**

378.11	140.12	540.76	79.72	242.20	223.13	226.85	36.16	74.92	128.20
334.70	177.10	274.49	93.28	126.98	27.53	149.84	59.17	94.90	252.24
829.65	109.71	566.65	37.80	565.13	234.63	270.55	172.17	66.18	296.77
604.08	81.77	381.74	108.89	245.85	65.34	164.00	69.44	73.67	118.21
54.36	207.51	467.21	217.37	370.00	158.61	96.15	96.15	248.49	483.66
173.23	101.09	1047.42	219.84	348.09	75.20	339.23	54.24	251.41	71.18
41.79	166.42	590.48	280.65	166.34	487.76	351.30	101.50	29.55	216.44
487.65	134.37	60.82	215.32	66.94	44.79	371.70	27.94	185.22	59.11
488.46	78.49	140.12	298.73	195.14	150.81	329.24	42.74	215.61	173.99
1966.81	129.85	338.18	106.84	349.30	20.14	118.21	34.52	118.21	202.29
377.30	271.61	277.78	377.22	105.08	41.91	140.69	107.25	47.87	126.54
660.07	110.95	277.78	167.65	144.43	50.13	280.54	59.58	200.21	185.22
309.95	362.02	13.56	258.47	157.82	85.47	519.88	283.53	273.47	54.94
772.04	257.64	533.78	189.84	281.96	150.81	84.91	41.09	163.58	40.79
610.98	326.68	908.94	165.60	307.92	31.23	34.13	91.63	217.27	237.67
574.06	233.40	46.84	41.50	97.37	18.90	67.43	83.42	106.56	96.15
667.37	146.29	146.29	48.08	150.92	129.44	213.94	118.34	171.07	57.44
452.35	220.66	451.59	412.15	131.85	127.38	373.78	75.61	238.50	152.76
536.74	139.71	399.41	129.85	103.45	25.89	177.73	29.18	229.76	341.73
518.48	87.53	419.95	342.29	213.80	154.50	114.46	119.58	131.95	270.55
562.70	347.63	182.86	313.53	199.20	113.00	180.23	96.15	161.50	117.79
1.62	64.92	200.53	224.36	178.51	169.30	151.09	121.63	93.65	82.41
270.60	110.13	184.50	248.60	209.34	204.22	86.16	68.62	140.69	39.96
398.39	242.44	218.61	136.42	231.25	41.09	151.93	131.49	146.93	96.57
253.56	110.95	148.34	147.11	162.68	106.43	75.75	122.45	63.68	111.13
218.26	68.21	16.44	225.18	193.92	18.08	68.26	19.72	275.13	137.36
718.89	140.53	338.59	51.78	344.84	160.26	106.97	86.70	73.26	129.03
169.58	129.44	307.78	19.72	119.28	147.11	96.57	57.12	133.61	46.62
293.72	254.77	428.58	70.68	197.17	291.75	93.65	52.60	53.28	141.10
131.04	297.50	96.57	126.15	101.83	408.45	93.24	102.73	14.57	113.63
465.74	393.66	663.22	205.87	112.78	405.57	131.53	69.03	48.70	80.33
165.12	229.29	239.56	65.75	223.94	156.56	100.31	146.70	51.61	72.43
355.80	67.39	516.52	99.44	171.20	31.23	213.53	36.16	80.75	79.08
1152.18	43.56	497.21	235.87	322.93	25.89	133.20	173.82	77.00	24.14

**TABLE A-2 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 1 FEMALE RAW DATA: AP 10.0 MG/KG/DAY.**

228.00	382.97	598.29	65.75	295.75	99.85	176.48	116.29	110.72	147.76
496.98	166.42	98.62	250.25	189.87	34.93	190.22	514.05	93.24	103.64
838.17	78.90	327.09	77.25	351.33	248.60	102.39	87.53	74.51	125.70
	234.63		62.46	241.80	70.68	135.69	103.96	122.37	164.41
	339.83		286.00	245.04	210.39	125.29	57.94	81.58	140.69
	216.14		72.32	109.94	321.34	159.83	237.10	57.02	39.13
	144.23		166.83	108.73	90.81	62.02	125.33	211.03	203.95
	96.98		91.22	121.30	294.63	221.02	383.38	40.38	167.33
	189.02		196.42	232.87	19.31	247.66	175.46	130.28	179.40
	145.05		449.54	185.40	165.19	80.75		238.50	40.79
	326.27		154.92	169.58	147.52	120.29		234.34	129.87
	117.11		53.01	154.98	68.21	227.26		155.26	100.73
	174.64		192.72		465.57	289.28		188.97	183.98
	341.47		127.79		14.79	262.23		136.94	134.86
	24.24		507.48		9.86	34.13		142.77	188.97
	38.63		140.94		44.38	171.49		294.69	105.72
	154.92		141.77		28.76	398.75		313.84	458.27
	183.68		110.54		12.33			127.78	73.67
	19.72		108.89		96.57			54.94	105.31
	158.20		61.64		119.58			183.98	89.07
	53.01		114.23		27.94				84.08
	83.01		184.91		38.63				89.91
	299.15		130.26		211.62				120.29
	138.07		224.36		168.06				104.06
	273.67		203.81		22.19				146.10
	86.70		299.15		55.47				142.35
	175.46		193.95		119.17				62.85
	181.21		119.17		84.65				34.96
	280.65		279.83		36.57				32.88
	115.88		197.65		41.50				44.54
	169.71		80.95		31.23				160.67
	276.13		132.31		90.81				
	293.39		156.15		19.72				
	89.17		264.63						

**TABLE A-2 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 1 FEMALE RAW DATA: AP 10.0 MG/KG/DAY.**

128.21	149.98
124.92	354.62
96.15	229.29
23.83	133.55
56.71	124.10
151.63	67.39
119.99	154.92
180.39	404.34
80.13	442.97
21.78	105.61
306.13	228.88
224.77	261.75
98.21	119.58
68.21	
399.82	
88.76	
94.92	

499.79	214.11	317.48	183.51	244.41	123.91	147.65	112.02	125.98	145.57
379.28	133.70	178.25	115.57	145.39	100.25	93.49	88.00	79.46	90.79

Group	211.44
Mean	
Group StDev	119.96

**TABLE A-3. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 2 FEMALE RAW DATA: AP 3.0 MG/KG/DAY.**

68B	70B	71B	72B	73B	74B	338	342	344	350
168.06	354.62	101.50	198.44	452.83	189.43	129.87	147.76	69.10	41.62
168.06	298.32	212.85	106.79	646.78	31.64	187.72	489.07	69.10	43.70
113.00	727.73	188.61	120.29	748.27	100.26	281.79	346.72	235.59	72.84
19.31	69.86	113.41	700.08	84.24	167.65	71.18	129.87	80.33	109.89
235.45	152.04	95.74	762.27	124.92	119.17	314.67	255.98	62.44	139.44
103.14	641.03	71.50	299.51	290.11	166.83	350.47	393.34	44.95	138.19
235.45	543.23	354.21	71.19	259.70	172.58	488.66	296.36	103.23	134.44
81.77	854.70	62.05	208.67	606.92	189.02	137.77	201.04	52.86	127.37
89.58	357.08	107.25	410.39	407.22	106.84	178.15	239.33	57.44	79.92
110.54	377.63	101.91	186.17	246.14	200.94	149.43	60.35	59.94	75.34
183.27	570.76	32.05	55.65	295.86	207.51	70.76	158.17	64.93	191.47
543.64	64.92	142.59	26.19	194.77	183.68	169.41	125.29	50.78	67.85
166.83	195.60	73.14	268.41	363.66	283.94	350.05	139.44	50.36	90.32
367.36	324.21	27.53	275.78	387.08	169.71	517.38	81.58	94.07	29.14
170.94	155.33	122.45	109.25	206.28	146.70	122.37	118.21	71.59	64.52
627.06	119.17	335.72	164.48	54.65	96.98	106.56	90.32	54.94	238.92
216.96	87.53	140.94	83.47	230.93	87.94	84.50	208.53	54.53	99.90
138.89	514.05	138.48	250.00	426.53	44.38	113.22	94.49	65.77	277.21
187.79	279.42	274.08	208.67	207.92	64.92	226.85	135.28	55.36	126.12
131.08	1177.68	85.88	274.96	407.22	174.64	154.84	161.92	56.61	289.28
125.74	272.85	234.22	53.19	428.99	182.86	327.99	152.34	186.89	37.46
52.19	320.92	61.23	372.34	958.25	249.84	79.08	352.97	180.65	123.21
100.26	126.56	175.87	748.36	172.17	164.78	59.94	51.20	53.69	63.27
116.29	361.19	91.22	217.27	637.74	47.26	177.32	158.17	199.38	140.69
64.10	297.09	323.39	271.28	641.44	53.01	178.15	42.87	79.08	142.35
129.85	187.38	26.71	169.39	5173.00	113.00	212.70	109.47	56.19	89.91
82.59	117.11	294.21	422.67	216.96	140.12	62.44	141.10	61.60	83.66
313.12	131.49	36.16	520.46	353.39	235.87	99.06	67.85	387.10	166.49
344.76	212.85	89.58	155.89	542.00	226.00	201.87	76.59	95.32	43.70
167.24	622.12	303.67	271.69	388.31	85.06	270.55	237.67	166.08	131.11

**TABLE A-3 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 2 FEMALE RAW DATA: AP 3.0 MG/KG/DAY.**

145.05	461.46	20.55	416.53	258.47	209.16	80.33	425.81	122.37	163.58
373.52	111.77	173.41	299.92	812.79	103.55	432.88	111.97	81.17	77.00
314.76	231.76	114.23	57.69	400.23	228.47	141.94	54.94	209.78	108.22
241.62	144.64	50.13	389.11	254.36	188.20	104.48	106.97	117.38	56.19
241.21	227.24	193.54	269.64	254.36	123.27	378.77	295.53	126.54	132.78
83.42	481.59	192.72	407.94	351.74	161.90	164.41	210.61	459.94	109.89
135.60	143.41	127.38	305.65	546.52	229.70	449.12	108.22	81.58	231.01
240.80	597.88	167.24	247.54	244.08	39.45	210.61	77.84	193.97	118.21
322.98	402.70	60.40	336.74	246.14	244.91	271.38	107.80	64.93	77.84
115.88	749.51	44.79	125.20	272.03	135.60	131.11	210.20	87.41	30.39
223.54	758.96	220.25	262.68	184.91	157.38	122.79	120.29	262.64	114.88
212.85	257.23	93.69	391.16	484.47	117.93	477.84	169.82	177.32	268.05
235.87	592.13	60.82	277.00	342.29	442.14	178.15	191.05	39.96	146.10
32.46	227.24	231.76	60.97	226.00	61.23	318.00	315.51	131.11	65.35
220.66	40.68	636.10	149.75	1067.14	115.06	281.79	397.09	37.05	81.17
90.81	1005.92	166.42	249.59	3395.38	83.01	86.99	187.72	58.27	52.86
46.02	127.38	85.06	186.58	1728.30	219.43	512.80	165.25	108.64	93.65
242.03	149.16	60.82	282.32	45.61	47.26	131.53	197.29	120.71	39.54
60.40	433.10	72.73	197.63	110.13	232.58	26.64	262.64	97.82	131.95
153.27	271.61	257.64	247.54	320.92	96.98	153.17	301.77	31.22	78.67
110.13	401.46	382.56	207.86	663.63	135.60	116.96	479.08	79.50	67.43
129.03	157.79	88.76	143.62	486.93	128.21	145.27	330.07	28.30	25.81
410.91	369.41	229.70	71.19	181.62	135.60	136.94	288.03	102.39	111.13
80.95	264.22	306.54	545.82	375.58	144.23	286.37	172.74	88.24	86.58
238.33	688.69	425.30	91.24	179.16	193.95	276.80	686.79	53.28	248.91
106.84	128.21	323.39	189.44	354.21	113.41	203.12	107.39	88.24	85.74
112.59	224.36	337.36	487.31	176.28	212.85	249.32	181.89	25.39	97.40
130.67	39.86	158.20	273.73	459.81	23.01	129.45	298.44	62.02	119.88
265.04	241.21	149.98	277.82	110.13	263.40	344.23	14.57	50.36	245.99
47.26	60.40	135.60	261.46	747.45	48.49	110.72	230.59	33.72	147.76
474.61	581.44	270.79	387.89	251.07	200.12	65.35	360.87	129.45	57.02
63.69	1051.12	85.47	290.51	283.53	280.65	376.28	187.31	156.09	155.26
121.63	251.07	108.89	113.75	251.48	94.92	234.76	285.54	137.36	53.69
107.66	263.81	306.95	297.87	417.49	249.84	296.36	335.07	91.57	87.41

**TABLE A-3 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 2 FEMALE RAW DATA: AP 3.0 MG/KG/DAY.**

98.62	136.83	479.95	586.33	355.03	380.10	208.12	181.06	94.49	68.68
85.88	362.02	124.51	76.51	416.26	89.99	108.64	203.12	102.39	257.65
91.22	207.92	209.16	202.95	261.34	207.92	384.18	293.44	56.19	24.97
350.92	89.17	401.87	57.28	561.31	214.09	382.93	99.06	70.76	38.71
84.24	279.83	131.08	283.96	500.08	96.57	765.87	32.88	166.49	106.97
461.46	256.00	54.65	71.60	223.54	189.02	363.37	183.14	40.79	72.01
155.74	223.13	85.47	158.76	417.90	177.93	74.09	164.41	399.58	47.03
115.06	137.66	65.34	317.51	3873.69	99.44	230.59	265.97	156.92	174.40
333.66	91.63	118.75	425.94	1760.77	241.21	410.82	285.95	116.13	55.36
521.45	492.69	578.57	98.61		306.13	66.18	347.14	82.83	100.73
100.26	41.91	147.52	105.16		286.41	468.26	134.44	32.47	49.95
126.56	192.31	66.16	192.31		110.13	1178.77	135.69	114.46	34.13
194.36	629.11	146.29	128.48		99.85	359.21	516.55	105.31	126.95
316.82	142.18	164.37	219.72		115.88	353.38	330.07	187.72	231.43
154.09	263.40	407.22	119.48		285.59	59.52	65.35	117.79	135.28
122.04	229.70	743.34	140.75		74.79	725.08	156.50	49.12	190.22
300.79	263.40	57.94	128.89		62.46	188.14	102.81	172.32	33.72
454.47	249.84	113.82	97.79		101.09	62.85	263.48	154.01	48.70
308.19	207.51	143.41	207.04		161.49	81.17	136.94	64.10	32.47
139.71	548.98	185.73	205.81		199.29	223.93	27.06	371.70	99.90
74.79	837.44	165.60	32.73		613.91	189.80	313.84	211.86	26.64
208.33	604.04	148.75	83.47		135.60	288.87	24.14	292.20	46.62
267.09	560.49	41.50	110.07		138.48	161.50	144.85	243.50	46.62
99.44	535.42	28.35	113.75		125.74	110.72	395.42	186.89	176.07
110.54	881.82	435.98	140.75		76.43	150.68	201.04	185.22	159.00
211.21	97.39	147.93	137.07		182.86	209.78	129.03	250.16	67.01
151.22	249.43	267.92	88.38		142.59	240.17	46.20	31.22	38.29
130.26	136.01	156.97	184.94		189.43	212.28	139.44	270.55	335.48
175.05	140.94	221.89	259.82		66.57	67.43	51.61	104.06	121.12
99.85	183.27	485.70	119.89		124.10	117.38	355.05	33.72	98.23
293.80	262.57	129.03	101.47		229.70	176.90	282.62	114.05	71.18
256.82	225.18	356.26	358.02		221.89	529.87	19.98	134.44	46.62
100.26	790.60	51.78	121.11		233.40	413.74	94.90	54.11	166.91
138.89	639.79	535.42	188.22		169.71	313.84	97.40	32.47	17.90

**TABLE A-3 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 2 FEMALE RAW DATA: AP 3.0 MG/KG/DAY.**

285.17	109.30	39.04	150.98	159.44	373.78	221.02	34.96	96.57
392.83	86.70	93.28	203.76	103.14	319.67	114.05	91.16	62.85
45.61	163.54	113.41	300.33	227.24	170.66	45.37	120.71	82.41
173.41	444.20	139.30	134.21	55.06	164.00	47.87	141.52	262.23
219.02	152.45	235.45	273.73	336.13	120.29	41.21	71.18	230.18
72.32	1019.89	87.53	241.41	281.48	655.15	298.02	112.80	60.35
132.31	121.22	220.25	306.87	149.16	135.69	211.45	72.43	
21.78	645.14	350.51	37.64	215.32	172.32	165.66	43.29	
388.73	79.72	101.50	329.38	166.42	174.40	98.23	247.66	
315.58	446.25	175.46	162.03	198.88	174.40	116.96	219.36	
195.60	329.55	107.25	134.21	264.63	235.59	77.84	140.69	
119.99	63.28	359.96	232.41	145.87	92.40	390.84	84.91	
164.78	240.80	195.18	227.50	55.47	226.85	301.35	129.87	
302.43	529.67	391.19	155.89	82.18	140.27	105.72	59.11	
152.04	285.59	189.02	614.15	224.36	594.38	170.24	119.04	
192.72	175.05	363.66	96.56	57.12	200.62	101.15	100.73	
196.83	113.82	283.94	518.82	327.50	117.79	44.95	78.67	
93.69	508.71	139.71	194.76	284.76	470.34	66.60	86.99	
232.17	100.26	590.48	609.24	359.14	56.61	133.20	83.66	
288.05	192.72	55.06	131.34	117.11	310.09	230.59	119.04	
371.47	187.38	85.47	194.35	136.01	486.16	57.02	145.68	
389.14	413.79	677.19	172.26	45.61	561.08	193.97	58.27	
144.23	764.30	296.27	379.70	162.72	234.34	145.68	341.73	
96.15	75.20	302.43	108.43	269.56		171.90	124.04	
161.90	522.68	69.86	187.40	158.20		98.23	78.67	
191.90	380.51	166.42	166.94	99.85		253.49	143.18	
92.87	644.72	484.06	198.85	120.40		89.49	109.05	
210.39	352.15	126.97	64.65	107.66		82.41	68.26	
133.14		714.17	152.21	117.93		111.55	155.67	
294.21			174.71	621.71		98.65	47.87	
157.79				22.60		391.68	223.93	
79.72				253.12		45.37	216.03	
149.16				129.85		25.81	37.46	
131.08				376.81		149.01	290.53	

**TABLE A-3 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 2 FEMALE RAW DATA: AP 3.0 MG/KG/DAY.**

194.77				162.31			138.61	184.39	
136.01				173.41			101.98	57.86	
150.39				272.03			75.34		
456.94				166.42			51.20		
145.05				202.58			197.71		
15.62				177.52			66.18		
357.08				135.19			238.09		
131.49				316.40			117.79		
382.56				243.67			137.77		
242.03							362.96		
301.20							252.24		
253.95							291.78		
112.18							382.52		
94.10							362.12		
293.80							325.49		
170.53							64.93		
212.03							154.84		
59.99							105.72		
98.21							223.93		
280.65							59.94		
232.99							354.63		
185.73							106.56		
196.01							74.92		
185.73							178.15		
168.06									
252.30									
192.51	341.20	200.86	230.49	561.76	172.31	244.35	184.50	118.63	109.31
113.57	246.98	155.57	148.32	820.30	97.01	173.97	118.62	82.56	69.03
				Group Mean	235.59				
				Group StDev	132.05				



**TABLE A-4. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 FEMALE RAW DATA: AP 1.0 MG/KG/DAY.**

78B	79B	80B	81B	82B	83B	353	358	362	364
72.73	61.64	147.52	53.42	97.80	631.16	77.42	153.17	147.76	149.01
588.84	55.88	331.61	166.01	471.73	967.70	159.83	289.28	347.97	229.34
257.64	1133.30	205.87	261.75	277.78	78.07	214.78	391.68	146.93	301.77
141.35	187.38	157.79	115.47	206.69	294.63	755.88	113.63	202.71	269.30
88.76	49.31	145.87	130.26	378.45	749.10	240.58	159.42	236.00	587.31
661.98	243.26	229.29	580.62	165.19	1017.01	238.92	139.44	191.88	195.63
335.72	184.09	304.08	172.17	198.47	313.94	180.23	236.42	164.83	276.38
377.63	433.93	175.46	423.65	292.16	261.34	165.66	194.80	91.99	254.74
550.21	470.91	136.83	386.26	210.80	271.61	278.04	175.23	31.63	95.73
374.34	603.63	254.36	113.41	141.77	44.38	159.83	142.35	79.08	318.42
196.01	238.33	493.51	27.12	46.43	336.13	91.99	131.11	104.89	216.03
259.70	158.61	72.32	54.65	337.77	703.07	79.08	171.90	37.05	380.44
245.32	200.53	108.07	147.93	172.17	326.68	119.46	150.26	230.59	290.53
66.57	258.05	60.40	145.87	66.98	163.54	272.63	87.41	107.80	346.72
363.25	120.40	376.81	106.43	120.81	315.99	269.72	96.57	351.72	519.46
198.06	263.81	172.17	239.15	206.69	142.18	883.25	149.01	362.12	81.58
320.10	463.10	22.60	48.49	62.05	165.60	371.70	189.80	362.12	42.46
214.50	309.01	258.88	309.83	333.66	394.48	208.53	234.76	124.45	188.97
179.16	177.10	322.98	23.42	371.06	75.20	298.86	58.27	155.26	348.39
272.03	261.34	797.17	66.98	226.82	131.90	174.82	400.83	62.85	228.93
123.69	77.66	286.00	362.84	274.08	139.71	379.19	335.48	103.64	54.11
191.08	369.00	216.96	47.67	156.56	196.01	155.26	248.91	317.59	196.05
112.18	332.84	344.76	17.67	225.59	210.80	377.94	201.04	129.45	110.72
164.78	341.88	241.21	122.86	51.36	262.57	389.18	392.92	250.99	49.53
69.44	350.51	1099.20	415.02	64.10	252.71	141.52	428.30	120.71	149.01
359.14	171.76	249.01	273.26	119.99	735.95	178.56	211.45	177.73	259.31
928.25	121.22	457.76	212.85	256.82	313.94	315.92	116.55	155.67	103.64
258.88	94.51	83.01	608.97	26.30	186.14	134.03	141.10	156.09	567.33
325.03	321.75	187.38	438.86	93.28	47.67	85.74	144.85	115.30	50.36
334.07	171.35	740.47	130.26	13.15	307.78	426.22	283.87	219.36	90.74
171.35	186.14	717.46	249.84	277.78	241.21	116.96	236.42	162.33	54.94
906.48	504.60	432.69	134.78	163.13	262.16	383.77	269.72	154.42	136.94

**TABLE A-4 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 FEMALE RAW DATA: AP 1.0 MG/KG/DAY.**

209.16	84.65	1194.12	148.34	277.78	416.67	154.01	247.66	263.48	229.34
147.52	126.97	777.45	114.23	569.12	170.53	771.70	184.81	170.24	383.35
95.33	520.63	276.55	410.09	150.39	264.22	561.08	256.40	231.84	91.57
80.54	636.51	104.78	146.70	279.01	592.13	347.97	257.65	47.87	292.61
163.13	95.74	177.93	133.14	588.84	418.31	650.99	128.62	144.85	34.13
93.28	960.72	310.65	230.11	140.53	203.81	367.53	542.35	372.53	191.05
101.50	169.71	664.45	329.14	215.73	341.06	142.35	134.44	221.44	42.87
63.69	117.11	907.30	200.53	308.60	232.17	203.95	167.33	22.89	213.94
262.99	191.49	243.67	258.88	304.90	273.26	447.45	115.71	41.21	172.74
145.87	76.84	328.32	242.85	86.29	211.21	117.38	268.05	171.90	146.10
175.87	80.95	226.00	46.84	197.65	201.76	127.37	409.99	159.83	71.59
150.39	161.08	389.14	314.76	184.09	219.43	163.58	85.74	183.14	61.19
130.67	204.64	486.93	64.10	115.88	516.11	146.51	178.56	67.43	367.95
246.96	71.50	190.25	182.04	120.40	422.01	670.97	290.95	347.97	898.65
62.46	138.89	1.64	33.28	101.09	321.75	229.34	290.53	22.06	146.10
202.99	126.97	406.39	145.87	237.92	789.37	119.88	221.44	262.23	27.06
205.05	376.40	391.19	405.98	78.90	858.40	126.12	220.19	32.88	240.17
205.05	161.90	353.39	122.04	202.17	190.66	138.61	308.85	203.54	116.55
82.18	366.12	268.33	140.94	60.40	248.19	232.26	458.69	326.33	54.94
504.19	191.90	518.57	87.53	436.80	775.39	872.84	207.28	209.37	246.83
1049.89	280.65	318.05	282.71	78.49	192.72	172.74	367.12	218.52	62.85
171.76	302.84	171.35	36.16	46.43	202.17	118.63	102.81	93.24	45.37
298.32	226.82	1163.30	179.16	495.56	189.02	201.87	183.56	181.89	353.38
221.48	186.14	324.21	31.23	211.21	457.76	56.19	547.35	163.16	91.16
112.18	245.73	448.72	84.65	81.77	1037.97	335.90	119.46	183.98	57.02
202.17	416.67	238.33	399.41	73.97	192.72	707.60	402.08	188.97	58.27
236.28	175.05	131.49	149.16	127.79	1000.16	238.50	228.10	407.91	277.21
150.39	462.28	1102.48	261.34	246.96	387.49	112.80	266.39	214.36	64.52
101.91	150.81	119.17	378.45	283.12	1063.03	156.50	238.50	217.69	85.33
297.09	193.13	365.71	198.88	228.88	99.85	125.29	143.18	251.82	104.89
232.99	127.79	50.54	159.85	89.99	423.65	328.82	366.70	187.72	74.92
122.86	305.31	150.81	221.07	96.15	324.21	218.52	72.43	137.77	72.01
50.95	268.74	339.83	188.20	139.71	93.28	1262.02	142.35	98.65	144.85
263.81	345.99	139.30	59.99	132.73	431.46	104.06	208.12	107.39	69.10

**TABLE A-4 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 FEMALE RAW DATA: AP 1.0 MG/KG/DAY.**

164.78	454.47	475.02	303.67	33.28	252.71	87.41	232.67	103.64	155.26
172.58	179.98	518.98	149.16	60.82	249.43	149.01	105.31	121.12	113.63
242.85	179.16	841.55	186.56	168.48	446.25	305.10	75.34	131.95	259.31
482.00	189.43	1169.87	440.50	225.59	73.97	248.49	538.61	30.39	41.62
154.09	232.58	259.70	81.36	283.12	381.74	341.73	131.11	196.88	101.15
422.01	305.31	687.05	53.42	704.72	614.73	273.05	108.22	199.79	65.77
135.19	229.70	752.79	186.56	200.53	51.78	373.36	277.63	212.28	25.39
283.12	128.21	767.18	48.08	412.97	399.82	355.88	79.50	71.18	156.92
161.49	273.26	875.66	213.26	258.47	163.13	264.31	402.50	275.96	87.83
142.18	113.82	372.29	370.64	222.30	91.22	93.65	175.23	241.42	178.98
278.60	364.48	745.40	395.71	382.15	94.51	185.22	286.37	313.84	45.37
142.18	124.51	270.38	602.81	347.63	211.62	786.26	291.36	57.44	74.51
148.75	188.61	265.86	321.34	232.58	112.59	239.75	214.36	147.35	108.64
724.44	203.40	510.36	200.12	353.80	176.69	720.92	215.61	191.05	113.22
379.68	140.53	309.01	761.83	218.20	226.00	403.75	302.60	44.54	202.71
592.95	98.62	154.92	57.12	242.03	415.02	474.51	447.87	34.13	206.04
239.15	225.59	449.13	167.24	64.92	159.85	62.44	208.53	48.70	71.18
138.89	200.12	325.86	377.22	116.29	136.83	146.93	361.71	189.39	197.29
78.07	500.08	119.17	64.51	96.15	502.55	52.86	126.54	367.53	430.80
320.10	267.09	376.81	71.09	287.64	242.44	74.92	179.81	192.72	66.18
408.86	73.14	307.36	55.06	50.13	158.20	267.22	492.82	79.50	132.78
107.25	262.99	987.02	34.11	394.89	381.33	208.12	113.22	247.66	41.21
103.14	755.67	149.16	212.44	192.72	202.17	94.07	16.23	137.36	93.65
108.07	73.97	388.31	260.11	1090.98	369.82	579.81	382.52	188.14	217.69
88.76	498.85	517.34	170.53	254.77	547.75	504.48	218.11	205.62	218.11
240.39	449.13	106.84	85.88	230.93	244.08	1488.03	261.39	77.00	357.96
201.76	112.59	152.04	295.45	440.50	756.49	135.28	231.43	186.89	243.08
110.13	170.12	969.35	228.88	407.22	577.33	175.65	96.98	325.49	136.11
124.51	75.61	142.18	75.61	78.07	1010.03	111.97	347.97	187.72	108.22
205.87	175.05	695.68	312.71	558.43	211.21	1225.81	66.60	79.50	255.57
172.58	191.49	240.80	76.02	133.96	674.72	413.32	138.19	285.95	80.75
244.49	303.25	150.39	50.95	212.03	470.09	290.53		156.09	75.34
141.35	499.67	493.51	102.32	164.78	242.03	388.35		242.25	83.66
117.11	289.28	518.16	16.44	257.64	1034.27	188.97		402.50	157.75

**TABLE A-4 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 FEMALE RAW DATA: AP 1.0 MG/KG/DAY.**

133.55	544.87	754.85	197.65	336.54	242.03	166.08	140.27	180.65
333.66	89.99	606.92	315.99	209.98	336.13	878.67	91.57	72.43
215.73	491.04	297.91	230.52	279.01	356.26	212.28	29.97	237.25
868.67	159.44	403.93	212.44	209.98	34.52	139.85	82.00	12.07
267.09	142.18	597.88	196.42	244.08	752.79	146.51	261.39	39.13
296.27	266.68	549.80	44.38	60.82	176.28	323.00	155.26	93.24
286.41	144.23	633.22	438.03	343.11	256.00	207.70	72.01	37.88
238.33	102.32	460.63	249.01	153.68	262.57	148.60	252.24	94.07
113.82	120.81	764.71	170.53	77.66	1168.23	314.67	95.73	98.23
241.62	119.58		364.48	421.19	96.15	356.30	153.59	241.42
99.85	396.12		468.03	785.67	193.54	217.27	98.23	199.38
289.28	80.54		328.73	191.49	504.60	207.70	254.74	154.01
155.74	276.13		314.35	685.40	92.87	134.44	282.21	53.28
161.49	408.86		101.09	426.53	131.49	97.82	201.04	237.25
270.79	86.70		131.90	272.44	349.69	352.13	114.46	45.79
502.14	239.15		392.01	156.56	37.39	203.54	183.56	51.20
700.61	321.75		443.79	510.77	280.24	203.95	325.49	54.11
132.73	206.69		524.33	155.33	853.88	116.55	168.57	57.02
122.04	419.13		92.46	143.82	182.04	270.14	253.90	103.64
113.00	209.16		233.40	279.01	28.76	180.23	162.33	94.49
173.41	38.63			94.92	267.51	96.98	74.09	38.71
113.41	265.86			203.40	348.04	445.37	152.34	95.73
378.45	179.16			268.33	372.70	104.06	486.58	102.39
562.13	104.78			8.22	210.80	50.78	213.94	222.27
190.66	77.66			283.53	384.20	203.54	135.69	34.13
160.26	366.95			207.10	139.71	167.74	134.03	149.01
192.31	232.99			307.78	155.33	365.87	113.63	76.59
86.29	67.80			189.43	363.66	231.43	162.33	134.03
309.83	92.46			224.77	520.22	255.98	269.72	304.27
	183.68			290.93	248.60	99.90	144.85	75.75
	206.28			81.36	43.15	174.40	303.43	144.02
	108.07			95.74	175.87	224.35	184.39	44.54
	815.66			140.94	671.02	479.92	124.45	96.98
	502.14			38.22	11.51	369.62	119.88	220.19

**TABLE A-4 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 FEMALE RAW DATA: AP 1.0 MG/KG/DAY.**

193.13	298.73	299.69	375.86	122.79
127.79	169.30		263.48	156.09
135.60			146.93	236.84
247.37			146.10	143.60
101.91			159.42	66.60
137.66			195.63	110.72
481.59			144.02	218.94
136.42			145.68	294.28
396.94			104.48	119.88
147.11			67.85	41.21
			99.48	230.59
			235.17	203.54
			131.11	233.09
			130.70	71.18
			143.18	146.93
			104.06	
			162.75	
			260.98	
			146.93	
			64.52	
			120.71	
			140.27	
			235.59	
			216.86	
			229.76	
			399.17	
			302.19	
			295.53	
			183.56	
			187.31	
			150.26	
			146.93	

**TABLE A-4 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 FEMALE RAW DATA: AP 1.0 MG/KG/DAY.**

248.34	254.20	405.92	212.11	228.88	344.86	290.48	228.51	178.11	160.59
184.58	179.04	280.70	148.27	161.07	256.16	241.13	118.11	90.94	125.28
				Group Mean	255.20				
				Group StDev	74.69				

**TABLE A-5. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 FEMALE RAW DATA: AP 0.1 MG/KG/DAY.**

85B	87B	88B	89B	93B	94B	365	369	371	374
111.36	37.80	202.54	381.33	142.18	108.48	126.54	186.06	283.94	360.37
108.48	10.27	418.17	322.98	246.96	382.56	121.54	314.26	622.95	239.56
573.23	177.10	156.30	442.14	425.71	318.05	337.57	79.92	164.37	185.73
802.10	163.96	346.15	376.40	204.64	113.41	57.02	89.07	527.61	182.45
174.64	214.91	778.23	395.30	89.99	229.70	452.45	95.73	267.09	581.85
397.35	608.56	164.89	164.78	317.64	120.40	82.83	242.25	686.23	188.20
377.22	369.41	339.61	243.26	373.11	102.73	156.09	493.65	276.55	285.59
160.26	256.41	72.42	401.87	199.70	413.38	179.40	370.45	223.54	67.80
111.36	377.22	241.41	114.23	150.81	122.04	190.22	247.66	367.77	36.16
227.65	152.04	501.23	147.11	83.42	172.17	146.93	191.05	228.06	183.27
200.53	626.23	112.11	354.21	383.79	374.34	95.32	293.03	251.07	396.53
424.06	295.04	326.92	625.41	310.65	284.35	155.67	194.38	327.50	406.39
323.39	306.13	209.08	470.91	295.04	269.97	57.02	169.82	249.43	450.36
39.86	1301.78	308.51	697.73	225.59	123.69	256.82	314.67	746.22	81.36
49.72	310.65	206.63	175.46	196.83	156.56	210.61	222.27	319.28	248.60
308.60	167.65	172.26	373.52	241.21	158.20	67.43	131.53	177.52	840.73
188.61	365.30	29.87	288.05	651.30	492.28	70.34	246.83	448.72	132.31
53.42	409.68	196.81	41.91	513.64	352.98	135.28	419.98	331.61	95.33
41.91	260.93	165.30	117.11	417.49	270.38	94.90	26.22	425.30	176.28
30.41	144.23	38.05	324.21	218.20	114.65	222.69	55.36	204.22	130.67
458.58	72.73	323.24	55.47	210.80	191.08	144.85	213.53	321.34	177.10
101.50	305.72	144.03	424.47	450.77	272.44	177.73	27.47	158.61	276.96
349.28	237.10	220.13	308.60	456.94	312.71	240.17	145.27	229.29	119.58
92.05	81.36	259.00	820.60	433.51	110.13	172.32	70.76	269.97	156.15
101.91	605.69	38.05	296.27	187.79	242.44	68.26	180.23	262.57	75.61
128.21	181.62	321.60	457.35	82.59	369.82	126.95	146.51	455.70	309.01
110.54	146.70	282.32	781.15	236.69	90.81	442.04	64.52	129.03	109.71
692.39	233.81	236.09	301.20	282.30	177.93	347.14	185.64	164.37	164.78
280.24	176.69	306.05	831.28	271.61	51.36	107.39	290.95	134.78	205.46
457.76	297.91	262.68	568.29	168.48	165.60	442.04	106.14	124.92	49.72
62.46	155.33	333.47	47.26	114.23	154.92	169.41	109.47	233.81	55.88
309.83	420.37	270.87	205.87	598.70	655.00	200.21	268.47	612.67	91.63

**TABLE A-5. (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 FEMALE RAW DATA: AP 0.1 MG/KG/DAY.**

128.21	210.80	117.43	405.98	128.21	131.08	48.70	235.59	48.08	89.17
57.12	121.63	238.95	143.00	112.59	271.20	216.44	381.27	242.44	60.82
48.90	357.50	410.39	603.63	284.35	291.75	85.33	238.92	227.24	210.80
199.29	504.19	502.45	191.49	271.61	243.67	122.37	302.60	134.78	143.41
447.49	228.47	130.93	345.17	179.16	100.67	147.35	436.63	168.48	147.11
260.52	390.37	235.27	915.93	191.08	281.07	130.28	113.22	512.82	208.33
220.25	265.04	178.80	338.18	272.03	115.88	237.67	215.61	207.92	82.18
243.67	323.80	200.49	150.39	177.52	106.02	75.75	105.72	114.65	80.54
193.54	248.60	213.17	418.72	185.73	145.05	219.36	43.70	219.43	108.89
599.52	272.03	325.29	255.18	702.25	876.89	94.49	350.47	164.37	121.22
472.96	204.22	212.77	290.11	316.82	75.20	45.79	159.42	191.49	274.90
183.68	229.70	479.95	280.24	207.92	174.64	177.32	180.23	115.88	186.97
152.45	154.50	205.40	430.23	283.12	623.77	104.89	291.78	213.26	117.11
434.34	202.17	198.44	424.06	176.28	742.52	146.51	186.47	83.42	124.92
119.99	175.05	469.72	373.93	127.79	146.29	313.01	168.57	30.82	130.67
586.79	649.24	421.85	185.32	200.12	386.26	165.66	202.29	147.11	356.26
459.81	186.56	238.13	285.17	154.09	208.33	718.84	148.18	42.74	123.69
458.58	185.32	174.30	27.53	184.09	251.89	283.04	323.00	226.82	33.28
134.37	525.15	340.83	55.88	234.63	138.89	218.94	84.50	323.39	260.11
36.57	312.71	465.22	308.60	128.21	602.81	564.83	240.17	60.82	110.54
136.83	241.21	135.02	435.16	399.82	347.22	527.37	51.20	161.49	126.97
514.05	340.24	79.79	883.88	135.60	298.73	285.95	275.13	207.92	452.42
381.74	193.13	214.40	1024.00	179.98	235.87	471.59	297.19	310.65	197.65
335.72	306.54	178.80	186.56	462.28	351.33	139.02	164.83	160.26	110.13
20.14	34.93	657.94	313.94	168.06	412.97	114.88	157.34	491.86	86.29
227.65	289.28	266.37	269.56	158.20	201.76	213.94	255.15	188.20	326.68
487.76	155.33	465.22	486.52	256.82	166.42	512.80	237.25	73.97	258.47
106.84	348.87	306.87	459.40	339.42	125.74	347.14	511.55	271.61	276.96
36.16	309.01	460.31	104.78	153.27	95.33	172.74	226.43	486.93	156.56
118.75	259.29	365.38	1141.52	159.44	309.83	64.93	231.01	417.90	142.59
246.14	213.26	157.12	736.77	238.33	379.68	121.12	471.18	99.03	179.57
240.80	459.81	403.03	950.44	32.46	281.48	176.48	294.69	269.15	189.43
440.91	115.88	446.81	936.06	109.71	261.75	150.26	92.40	115.47	170.53
281.48	212.03	406.30	443.38	380.10	95.33	107.39	121.54	47.67	282.71



**TABLE A-5. (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 FEMALE RAW DATA: AP 0.1 MG/KG/DAY.**

105.61	250.66	384.20	1365.88	159.85	93.28	195.21	72.43	131.49	170.53
315.58	467.62	201.72	511.59	207.51	167.65	196.46	199.79	251.48	282.30
440.50	163.13	325.29	141.35	298.32	294.63	135.69	82.83	422.42	155.33
24.66	623.77	344.52	578.16	326.27	146.29	36.63	44.54	234.63	70.68
91.22	943.87	162.44	191.08	99.44	116.29	180.65	295.94	100.67	147.93
129.85	408.04	304.83	1123.03	415.43	242.85	216.86	320.50	168.06	361.19
113.82	322.57	432.08	349.28	334.07	231.76	178.56	54.94	37.39	329.14
38.22	127.38	155.48	191.08	196.01	80.13	142.77	207.28	157.38	546.93
622.95	2.88	482.40	357.91	319.28	386.26	126.95	117.79	609.39	222.72
156.56	613.91	586.74	366.95	207.92	430.64	76.17	696.36	32.05	157.79
349.28	228.88	248.77	137.66	755.26	218.61	174.40	241.00	195.18	266.68
36.57	152.45	865.79	290.93	147.52	145.05	164.00	511.13	233.81	106.43
81.36	412.56	406.30	37.39	393.66	989.48	216.86	411.66	161.90	233.81
249.84	392.83	96.97	284.76	151.22	147.93	163.58	113.63	213.68	221.89
120.40	183.68	372.34	517.34	273.67	513.64	129.87	470.34	166.42	98.62
231.76	541.58	270.05	237.92	228.06	111.36	273.47	216.44	226.41	97.39
340.65	285.59	353.11	239.56	101.50	233.40	160.67	266.81	71.91	558.02
109.30	398.59	1083.47	319.28	91.22	193.54	320.50	231.84	57.94	253.53
733.89	224.36	739.36	168.48	82.59	108.48	450.78	208.12	82.18	139.71
436.80	340.65	183.71	203.81	126.56	101.50	147.76	232.26	50.95	111.77
161.49	221.89	535.19	246.14	117.11	245.32	355.46	356.71	53.01	119.99
247.78	313.53	504.09	568.71	245.73	115.06	248.49	141.94	283.12	246.96
177.10	262.16	121.93	645.14	347.63	861.28	104.89	157.75	313.12	254.36
754.85	435.57	169.39	785.26	163.13	131.49	100.31	79.50	108.48	668.15
445.84	278.19	90.02	635.27	438.45	902.78	134.03	388.35	239.97	689.92
73.97	584.73	236.50	464.33	275.72	87.11	357.13	178.56	174.64	55.06
299.56	274.90	154.26	259.29	237.92	172.17	69.93	265.97	167.65	112.18
309.42	252.30	360.88	687.46	167.24	689.92	48.70	165.66	145.87	329.14
85.06	89.99	99.84	43.56	89.99	39.45	259.73	225.60	111.36	316.40
279.42	528.02	602.70	18.90	204.22	474.61	71.18	182.31	343.94	139.71
358.73	183.68	690.26	479.13	157.38	266.27	55.78	535.28	168.89	132.31
372.70	260.11	559.74	523.92	721.57	235.45	130.28	223.10	186.56	457.76
111.36	124.92	124.80	827.58	222.72	91.63	80.75	357.96	131.90	344.35
142.18	217.37	124.39	286.41	209.98	176.28	181.06	81.17	288.05	113.00

**TABLE A-5. (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 FEMALE RAW DATA: AP 0.1 MG/KG/DAY.**

173.41	270.79	478.31	651.30	293.80	207.10	198.13	102.39	237.51	229.70
43.97	352.98	301.55	156.15	283.53	144.64	363.79	327.99	176.28	162.31
271.20	93.69	233.22	921.27	345.99	714.58	230.59	153.59	150.81	118.34
499.26	397.77	146.07	597.88	176.69	246.96	223.93	288.03	92.87	87.94
418.72	302.84	257.36	601.58	57.94	215.32	263.48	223.52	115.47	122.86
328.73	301.20	193.94	258.47	71.09	299.15	126.95	138.19	76.84	175.05
278.19	122.45	187.40	271.61	245.32	279.83	175.65	270.55	437.62	428.58
209.16	527.20	154.66	1221.65	83.01	339.83	264.31	18.73	283.94	160.67
149.57	355.85	372.75	528.44	250.66	177.10	305.10	286.79	136.01	251.89
409.27	309.42	189.03	169.71	119.99	38.22	186.89	106.56	73.55	87.94
20.55	418.72	137.89	137.25	311.06	69.03	276.80	220.60	352.56	219.43
246.96	237.51	38.87	621.71	302.84	246.96	224.35	73.26	213.68	177.10
20.55	414.61	423.48	751.15	47.26	81.77	290.53	385.02	181.62	52.60
25.89	197.24	211.95	470.09	56.30	251.89	168.99	349.64	111.77	175.87
287.23	232.99	327.74		232.99	118.34	544.85	323.41	388.31	64.92
186.56	292.57	138.30		166.42	65.75	79.92	421.64	88.76	671.02
508.71	576.92	316.28		237.10	311.88	89.07	303.85	73.97	176.69
170.94	1011.67	238.95		235.87	102.32	103.64	385.85	300.38	97.80
694.86	531.31	131.75		228.06	307.36	358.38		321.75	239.97
205.05	61.23	146.07		230.52	49.72	125.29		152.86	486.93
177.93	319.28	199.26		191.49	56.30	162.75		93.28	113.41
78.49	420.78	387.89		47.26	227.24	176.07		191.49	214.91
413.79	383.79	210.31		490.63	170.12	199.79		148.75	98.62
273.67	235.45	337.56		193.13	237.10	239.33		242.03	224.36
13.15	161.49	165.30		242.03	240.39	43.29		104.37	339.83
285.59	73.55	180.03		24.66	232.17	77.84		246.55	86.29
194.36	663.22	285.60		1140.29	221.89	202.71		342.70	248.19
502.96	150.39	22.50		584.73	36.98	231.84		29.18	202.17
257.64	333.66	293.37		201.35	491.04	178.56		147.11	115.88
17.26	194.36	139.12		201.35	141.35	328.41		115.06	112.18
409.27	495.56	116.20		137.25	189.43	54.94		95.33	36.98
311.47	264.63	181.26		149.98	234.22	551.93			203.40
130.67	249.43	159.98		623.36	1141.93	192.72			192.72
251.48	189.43	178.40		343.52	575.28	156.92			194.36

**TABLE A-5. (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 FEMALE RAW DATA: AP 0.1 MG/KG/DAY.**

261.34	51.36	442.31	140.53	171.35	304.68	164.78
73.55	203.81	180.44	92.05	205.87	166.08	68.21
380.92	239.97		174.23	135.60	176.48	250.25
40.27	674.72		214.09	625.00	173.99	119.58
274.49	765.53		942.64	343.94		308.60
264.63	459.40		233.81	134.37		332.84
435.57	82.18		323.80	94.51		261.34
624.18	388.73			174.64		109.71
98.21	263.81			214.91		166.01
458.99	276.55			947.16		123.27
257.23	253.53			234.63		216.14
270.38	369.00			317.64		309.01
687.87	240.39			111.36		68.62
161.49	126.56			309.42		238.74
279.01	161.49					258.05
205.05	440.91					242.85
249.84	233.81					384.20
145.87	143.41					103.14
400.23	174.64					325.86
72.73	64.51					134.78
	393.66					215.73
	509.53					139.71
	356.26					592.95
	279.83					38.22
	345.99					128.62
	183.27					193.54
	359.96					250.66
	493.10					480.77
	261.34					370.23
	365.71					664.04
	144.23					187.38
	313.53					336.13
	235.45					238.74
	445.43					223.54



**TABLE A-6. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 5 FEMALE RAW DATA: 0 MG/KG/DAY.**

96B	97B	98B	99B	101B	102B	382	385	388	390
65.34	217.27	83.01	234.63	288.05	184.09	717.87	297.91	494.74	355.44
188.61	218.49	110.13	265.86	156.97	386.67	162.72	85.06	740.88	295.45
583.09	205.81	203.40	308.60	355.44	306.13	749.51	398.59	411.33	181.21
88.76	55.65	560.08	319.28	618.43	225.59	449.13	93.69	459.40	443.79
608.97	156.30	590.89	1548.32	389.96	516.93	483.65	253.53	435.16	485.29
94.10	575.28	141.35	577.33	399.00	354.21	222.30	242.44	225.59	456.53
163.54	111.29	386.67	464.33	396.12	549.39	200.12	154.50	529.67	314.76
302.84	392.80	321.34	239.97	227.24	882.64	256.00	370.64	196.42	469.68
104.78	113.34	630.34	81.77	361.19	233.81	591.31	87.94	490.63	156.15
347.22	72.83	283.53	1013.31	768.82	416.67	202.17	205.46	532.54	221.48
251.07	298.28	170.53	539.94	377.22	392.42	261.34	57.94	703.90	385.44
284.76	610.88	709.65	480.77	130.26	218.20	993.18	183.68	383.38	542.82
116.70	90.02	463.10	1069.61	53.83	465.98	164.78	138.07	122.45	310.24
92.05	1011.04	859.22	81.77	352.56	189.84	362.43	125.74	369.41	235.45
79.31	293.37	757.73	272.44	166.83	528.02	170.94	473.37	119.17	106.02
108.89	120.70	94.10	747.45	190.25	169.30	276.13	235.04	503.78	203.81
293.80	199.67	449.13	479.13	242.44	291.34	53.42	385.03	651.30	234.63
204.22	408.35	266.27	232.58	417.90	391.60	287.23	297.09	597.88	539.53
248.19	120.29	290.52	261.34	270.38	81.36	564.19	251.48	431.46	229.70
195.18	417.35	1299.72	258.47	209.57	155.33	110.54	409.68	1440.25	243.26
291.75	322.01	436.39	187.79	162.72	922.50	447.07	377.63	255.18	406.39
186.56	63.01	455.29	266.68	317.23	201.76	166.83	99.85	175.87	172.58
196.42	394.84	114.65	201.76	98.62	191.90	243.67	173.00	283.94	244.08
363.25	144.03	356.67	269.15	328.32	482.00	76.43	189.43	264.63	122.45
150.39	87.97	332.84	196.83	380.51	482.41	228.88	339.83	491.86	185.32
562.13	129.71	628.29	690.75	382.56	335.72	80.54	168.06	449.95	264.63
287.23	123.98	277.78	138.89	207.10	372.70	655.82	199.70	588.43	176.28
229.29	121.11	695.27	409.68	235.04	92.05	740.47	510.77	375.99	241.21
267.51	96.15	202.58	433.10	141.77	118.34	200.53	392.83	440.91	177.10
100.67	98.20	444.61	574.46	1507.64	380.10	291.75	237.51	201.35	269.15
348.87	308.51	203.40	98.21	406.81	144.64	274.08	285.59	641.03	308.60
428.17	272.91	625.82	46.84	304.49	436.80	326.68	556.79	394.07	336.54

**TABLE A-6. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS),  
5-DAY OLD RAT PUPS. GROUP 5 FEMALE RAW DATA: 0 MG/KG/DAY.**

95.74	85.11	776.22	717.87	219.02	3155.00	180.39	251.48	271.61	236.69
312.71	274.14	415.43	246.55	295.45	198.47	177.52	232.99	620.48	96.57
298.32	65.47	178.34	580.21	157.79	180.80	242.44	168.06	176.69	80.54
181.21	113.34	339.83	237.92	179.98	205.87	386.26	630.75	368.59	219.84
99.85	127.66	483.65	505.01	719.51	662.80	299.97	491.45	185.73	174.23
161.90	69.15	563.36	165.19	276.13	671.02	328.73	345.17	295.45	251.07
262.57	215.63	463.92	71.09	321.34	570.35	291.75	253.95	239.97	221.48
166.42	54.01	366.95	654.59	241.21	621.71	227.24	117.52	353.80	253.53
228.88	296.64	699.38	130.67	565.01	1190.83	50.54	208.74	678.01	275.31
182.45	99.02	297.09	44.38	248.19	920.86	78.90	616.37	458.99	383.38
129.85	179.21	612.67	115.06	133.14	210.80	210.39	166.42	494.74	146.70
407.22	159.57	294.21	45.61	349.69	412.15	547.75	311.06	309.01	154.92
327.09	109.66	619.25	325.03	1502.71	280.65	354.62	301.61	469.26	410.09
152.04	105.16	1065.09	120.81	313.53	417.90	309.83	276.96	239.56	94.10
138.89	189.85	1073.72	153.68	191.08	313.12	376.40	556.38	99.03	153.27
130.26	492.63	304.08	935.24	347.22	365.30	1047.83	427.76	204.22	235.45
493.10	256.55	205.87	166.01	274.08	233.40	675.13	399.41	211.21	121.22
143.82	410.80	388.73	240.39	207.10	224.36	395.30	802.10	238.33	132.31
169.71	631.34	943.05	256.41	259.29	880.18	73.55	167.24	693.21	474.20
118.75	221.77	334.48	590.89	110.95	270.38	92.87	314.35	347.22	96.57
271.61	68.74	293.80	204.22	101.91	319.69	76.84	461.87	165.19	107.66
379.27	570.37	322.16	156.97	287.64	392.42	436.39	53.01	88.76	243.26
78.07	233.63	556.79	238.33	209.98	90.81	25.89	87.11	254.77	206.69
274.49	277.00	394.89	235.87	227.65	164.37	88.35	135.60	371.06	229.70
452.83	46.24	223.13	110.95	223.54	342.29	284.35	50.13	431.05	258.05
486.11	177.99	635.27	316.82	330.38	418.31	79.72	249.84	380.92	193.95
129.03	277.00	110.54	585.14	178.34	92.87	79.72	144.64	220.25	249.84
211.21	186.58	431.87	495.15	380.92	139.30	157.79	115.88	269.56	322.57
272.85	124.80	302.84	109.30	776.63	433.10	38.22	418.31	229.29	183.27
885.93	27.82	168.89	340.24	170.94	159.44	391.19	124.51	252.71	67.39
293.39	148.94	507.07	364.89	266.27	140.94	276.96	213.68	1317.80	145.05
149.57	223.81	321.34	250.25	366.95	345.99	79.31	108.48	373.11	135.60
108.48	310.96	395.71	236.28	503.37	1155.49	224.77	62.87	872.37	192.72
135.60	199.67	754.85	595.83	1201.51	336.95	92.05	98.21	410.09	278.60

**TABLE A-6. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 5 FEMALE RAW DATA: 0 MG/KG/DAY.**

106.84	52.37	299.56	177.52	226.41	142.18	483.24	133.96	165.19	250.66
172.58	226.68	295.45	326.68	294.63	106.02	147.11	124.10	258.88	253.95
104.37	204.99	551.86	369.00	170.94	370.23	330.38	226.82	483.24	107.66
154.50	135.84	381.33	87.11	223.95	236.69	274.49	194.77	1206.85	105.19
129.44	209.90	400.23	146.70	144.64	382.97	412.15	159.02	548.57	236.28
200.12	92.47	125.74	901.55	183.27	490.63	330.79	285.17	238.74	271.61
211.21	49.10	357.50	362.43	382.15	430.23	303.25	214.09	591.31	207.92
309.42	74.06	926.61	141.77	915.52	169.30	291.34	129.44	351.74	326.27
281.89	53.60	955.79	355.03	743.75	166.83	385.85	111.36	279.01	177.52
173.00	63.01	366.54	535.42	250.25	151.22	106.84	231.35	519.81	214.09
143.82	84.29	250.25	154.92	256.82	575.69	105.61	103.55	299.15	359.96
129.03	113.34	1024.41	168.06	505.42	3171.43	598.70	141.77	723.62	110.54
266.27	140.34	35.75	274.90	212.85	72.32	509.12	303.25	253.12	206.69
141.35	110.07	420.78	173.41	815.25	354.21	352.15	228.47	26.30	289.28
435.57	176.76	311.47	235.87	692.80	904.83	349.69	139.71	385.03	514.88
68.62	78.97	597.06	357.91	373.11	355.03	332.43	257.23	737.18	142.59
50.54	42.55	470.91	852.24	581.85	537.06	302.02	174.23	422.01	505.01
193.54	38.46	340.65	323.39	149.16	987.84	338.18	238.33	522.68	469.68
242.44	70.38	338.18	420.37	196.42	772.52	684.17	221.48	333.66	596.65
69.44	28.23	785.26	299.56	69.03	117.93	392.42	331.61	350.10	240.80
179.98	60.56	693.62	117.11	78.90	395.30	293.39	172.17	734.71	183.27
226.41	28.23	190.25	288.46	233.81	378.45	305.31	254.77	291.75	493.92
241.21	60.56	53.42	316.82	260.11	346.40	403.11	170.53	150.81	441.73
286.41	42.96	490.63	273.67	173.82	283.53	133.96	97.80	428.17	178.75
312.71	104.75	271.20	144.23	154.92	368.18	694.03	157.79	865.39	297.91
219.02	42.96	245.32	245.73	209.98	214.09	551.86	79.31	427.35	420.37
143.41	52.37	246.14	147.93	578.98	605.28	198.06	130.67	343.52	54.65
127.79	142.80	473.37	332.02	350.51	351.33	548.57	431.05	373.93	542.41
183.27	268.00	226.00	32.05	69.86	274.90	476.25	213.26	399.82	506.25
422.01	168.58	70.68	790.19	458.17	453.24	840.32	126.97	37.80	665.27
330.79	153.44	394.89	169.71	179.98	180.80	311.47	130.26	171.76	130.26
403.11	129.71	459.81	779.50	161.49	267.51	170.12	66.57	128.21	219.43
244.08	164.08	102.32	131.49	197.24	152.86	125.74	104.37	396.12	294.63
76.43	45.42	188.61	163.96	135.19	166.83	814.84	119.99	220.66	463.10

**TABLE A-6. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS),  
5-DAY OLD RAT PUPS. GROUP 5 FEMALE RAW DATA: 0 MG/KG/DAY.**

143.82	104.34	152.04	281.48	220.25	116.70	434.75	73.97	333.66	221.07
749.10	173.08	342.29	486.11	841.96	157.79	471.32	76.84	237.92	236.28
306.54	370.29	428.17	254.77	227.24	1130.01	147.11	42.74	417.90	325.86
220.66	245.91	100.67	649.66	282.71	343.11	96.57	205.87	346.81	271.61
348.46	999.59	311.06	81.77	294.21	172.17	101.50	199.29	230.52	197.24
226.41	13.09		526.38	164.78	161.90	45.20	134.37	338.18	380.10
43.97	12.68		469.68	1135.36	198.88	186.14	87.53	176.28	126.97
176.69	507.36		224.77	708.83	405.98	146.29	251.48	120.40	233.40
246.55	307.69		208.33	354.62	261.34	405.57	106.43	360.37	218.20
347.22	244.68		495.56	682.53	127.38	173.00	78.07	207.92	204.64
185.32	45.83		447.07	65.75	344.35	78.07	268.33	801.69	160.67
130.26	102.70		367.77	237.51	467.62	241.62	101.09	330.38	504.19
232.58	1360.06		180.39	173.41	163.96	175.46	157.38	696.50	181.21
225.18	382.57		364.07	322.98	204.64	558.43	31.23	445.02	414.61
42.32	230.36		595.83	322.57	235.45	193.54	396.94	249.84	139.71
388.73	58.10		203.81	283.94	685.40	57.12	166.83	961.95	151.22
434.75	258.59		410.91	378.04	186.14	353.39	119.99	233.81	276.55
42.32	9.82		188.20	851.00	277.37	256.82	162.31	168.48	164.37
118.34	161.21		98.21	447.90	242.85	241.21	117.11	293.39	189.02
62.87	81.01		448.72	624.18	366.95	149.16	171.35	275.31	166.83
198.06	298.28		282.71	135.19	2616.29	170.94	243.26	176.69	64.10
336.13	122.34		166.01	1379.85	938.53	99.85	279.83	227.24	66.16
394.89	287.64		203.40	374.75	935.65	181.62	407.63	369.41	241.62
66.98	233.63		84.24	227.24	260.11	426.94	131.49	615.55	88.35
204.22	133.39		227.24	1172.75	511.59	521.04	310.24	114.23	108.07
332.43	98.61		571.17		659.52	339.00	121.63	73.97	73.97
612.26	164.08		682.53		424.06	577.33	76.02	207.51	228.88
194.77	186.99		157.38			36.98	161.49	583.91	151.63
485.29	83.88		43.97			245.73	78.07		242.44
118.75	57.28		896.61			385.03	318.46		62.46
670.20	110.88		161.49			541.58	246.96		245.32
119.99	238.13		264.63			233.81	290.52		137.66
129.03	49.51					439.68	214.09		276.13
614.32	359.66					812.79	469.26		200.12



**TABLE A-6. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 5 FEMALE RAW DATA: 0 MG/KG/DAY.**

532.54	132.16	456.53	376.40
197.65	73.65		271.61
205.05	39.69		179.57
399.41	171.85		270.79
811.97	263.50		236.28
137.66	376.02		194.36
126.97	74.06		220.25
585.55	270.05		300.79
763.07			212.85
173.41			290.52
982.91			116.29
471.32			210.39
			114.23
			185.73
			229.70
			463.92
			272.85
			385.03
			233.40
			83.83
			228.88
			327.09
			443.38
			298.73
			470.91
			453.65
			339.42
			171.76
			360.37
			507.07
			221.89

**TABLE A-6. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 5 FEMALE RAW DATA: 0 MG/KG/DAY.**

258.08	196.38	418.71	339.81	364.19	434.24	315.32	235.25	392.62	252.02
176.15	189.38	250.40	246.23	284.81	467.36	208.29	134.57	237.49	129.42
				Group Mean		320.66			
				Group StDev		82.56			

**TABLE A-7. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 1 MALE RAW DATA: AP 10.0 MG/KG/DAY.**

57A	58A	60A	62A	63A	65A	253	257	259	265
41.09	128.62	217.45	151.22	314.76	293.80	102.73	98.21	137.66	114.65
61.64	446.66	92.09	165.19	285.59	189.02	257.64	136.42	48.49	314.35
139.30	339.42	98.99	100.26	297.50	159.44	200.12	59.17	115.47	366.54
108.07	713.76	52.74	237.51	275.31	117.52	362.02	103.14	115.88	264.63
78.90	250.25	277.90	66.57	162.72	156.97	55.06	297.91	141.35	108.89
159.85	297.91	38.14	128.62	347.22	140.94	92.05	476.66	94.51	207.10
216.96	287.23	148.89	180.39	371.47	159.44	454.06	339.42	26.30	59.17
34.93	150.39	94.53	154.92	196.83	507.48	366.95	349.69	204.22	129.44
117.52	467.21	311.98	224.36	114.65	230.93	199.29	180.80	99.03	256.82
216.55	385.03	99.40	65.75	187.38	220.25	189.43	225.59	84.65	133.14
159.85	205.87	315.23	60.40	733.07	168.48	99.85	142.18	84.24	75.20
17.26	377.63	98.58	92.05	130.26	49.31	186.14	356.26	94.10	318.46
91.22	287.64	157.00	252.30	264.22	69.44	486.11	473.37	83.42	172.58
46.43	246.55	319.69	107.66	78.90	310.65	159.02	148.75	133.14	145.46
99.85	155.74	60.45	104.37	269.56	273.67	177.10	285.59	93.28	36.57
62.05	210.39	339.97	188.20	34.11	228.88	198.06	543.64	103.96	148.75
82.18	414.61	137.94	255.59	183.68	383.38	126.15	729.37	127.38	147.93
66.57	242.85	247.88	127.79	202.17	251.89	401.05	441.32	199.29	270.79
204.64	808.68	98.58	287.23	184.91	174.23	326.68	426.94	164.37	140.53
90.81	145.87	240.98	200.12	249.84	162.72	122.45	661.98	133.55	138.89
204.64	367.36	148.89	260.52	110.13	179.57	401.05	374.34	129.44	366.12
32.87	70.68	254.78	197.65	357.08	218.20	767.18	622.12	107.25	120.81
108.07	130.26	160.66	203.81	136.42	231.35	490.22	350.51	83.01	131.90
196.42	438.86	48.28	113.00	208.74	467.21	744.58	240.39	168.89	263.40
26.71	281.48	224.35	53.42	362.43	164.37	222.30	331.20	91.63	129.44
120.40	334.90	305.90	189.43	135.60	149.16	397.77	525.97	61.23	454.47
159.44	553.91	103.45	79.31	85.88	516.93	353.39	273.67	178.75	305.31
22.19	467.62	182.16	156.15	343.52	471.73	238.33	1023.18	117.93	323.80
204.64	91.63	128.61	113.82	82.59	488.17	484.47	101.50	376.40	145.87
91.63	122.04	47.47	137.66	286.41	148.75	364.48	277.78	81.77	158.61
219.02	95.74	205.28	310.65	66.98	167.24	428.99	262.57	126.56	322.16
62.05	197.24	180.54	170.12	121.22	830.87	289.28	180.80	97.39	92.05

**TABLE A-7 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 1 MALE RAW DATA: AP 10.0 MG/KG/DAY.**

86.29	138.48	157.82	101.09	214.50	340.24	533.37	219.43	140.94	77.25
443.38	643.08	50.71	103.55	416.67	238.33	433.10	310.65	204.22	133.96
83.01	952.09	159.84	150.81	160.67	418.72	838.68	256.00	101.50	123.27
246.55	162.31	152.54	216.55	72.73	364.89	542.00	596.24	118.75	657.46
80.54	238.74	141.59	132.31	110.54	272.44	310.24	258.05	217.78	310.24
82.18	179.98	181.35	82.18	138.07	292.98	147.52	170.94	81.36	183.68
39.04	145.46	114.41	90.81	287.64	443.38	193.13	163.13	50.95	366.95
16.44	89.58	83.17	220.66	419.95	125.74	184.09	254.77	71.09	398.59
59.58	277.78	80.73	155.74	182.04	190.25	212.03	295.04	219.02	104.37
37.39	110.95	103.05	207.92	248.19	466.80	344.35	381.33	175.05	449.95
178.75	378.04	81.95	93.28	267.92	349.28	57.94	607.74	43.15	292.98
155.74	278.19	93.31	114.23	81.77	334.48	186.14	334.48	103.14	209.98
104.37	253.53	83.57	151.22	358.73	145.05	130.67	140.94	147.52	49.72
46.43	72.32	92.50	126.15	309.01	172.17	309.83	177.93	67.80	97.39
28.76	348.46	112.38	163.54	192.31	78.90	227.24	434.34	37.80	77.25
173.00	175.87	247.48	141.35	246.14	221.89	230.52	401.46	85.06	255.59
68.62	254.77	121.71	101.50	125.74	163.54	309.42	374.75	141.35	109.30
62.05	240.80	104.67	106.84	150.81	408.45	101.09	103.96	80.54	186.97
101.09	152.45	180.13	52.60	213.26	555.56	203.81	817.72	93.28	137.66
183.68	69.86	134.69	52.19	398.18	428.17	247.37	287.64	297.09	327.09
119.58	119.17	110.76	173.82	147.11	481.18	145.87	1004.68	78.49	323.39
161.90	183.68	153.35	215.73	239.15	178.34	454.06	453.65	69.86	233.40
98.21	105.61	168.77	152.45	439.27	374.34	373.52	244.08	101.09	249.84
87.11	326.27	166.74	198.88	334.07	145.05	209.16	74.79	232.17	253.53
57.94	192.31	166.34	183.68	278.60	125.74	113.00	133.96	179.16	76.02
67.80	542.41	106.70	152.86	394.48	286.00	256.41	626.23	92.87	276.13
243.26	70.68	32.05	117.11	271.61	105.61	152.04	348.87	60.82	198.06
25.48	83.42	93.72	270.79	101.09	144.23	641.85	101.09	108.48	162.72
69.44	176.69	42.19	130.67	84.65	147.93	316.40	638.15	182.04	73.97
80.13	123.27	83.98	107.66	189.84	144.64	242.03	175.05	124.10	116.70
228.88	74.79	223.94	160.67	167.65	51.36	228.47	539.53	91.63	298.73
92.87	99.44	169.99	70.27	221.07	23.83	104.37	377.22	54.65	481.59
180.39	229.70	87.63	87.94	35.34	49.31	147.52	138.89	408.04	55.88
148.75	137.66	366.75	48.49	128.21	382.15	102.73	393.25	139.30	216.55

**TABLE A-7 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 1 MALE RAW DATA: AP 10.0 MG/KG/DAY.**

110.13	89.58	50.71	291.75	228.88	111.36	78.49	210.80	306.54	156.15
156.97	208.74	111.57	79.31	8.22	328.32	252.30	551.04	462.69	81.36
86.29	233.81	212.18	191.49	138.89	234.22	295.45	921.27	168.06	230.52
127.38	264.63	64.91	248.60	216.96	62.46	348.87	332.43	285.17	253.53
111.77	92.46	168.77	133.14	209.57	253.53	228.06	503.37	144.23	162.72
97.80	248.60	83.98	207.51	297.50	169.30	476.66	408.04	185.73	283.53
124.10	947.16	123.33	111.36	190.25	119.99	501.32	282.30	334.07	205.46
127.79	338.18	41.38	104.37	390.78	152.04	237.10	1025.23	92.87	246.14
64.92	298.73	271.41	192.31	132.31	77.66	159.85	397.35	51.78	219.43
13.56	105.19	124.14	80.54	284.76	217.37	169.30	152.04	84.24	135.60
74.38	53.42	69.37	115.06	387.49	234.22	567.47	184.91	86.70	150.39
41.50	240.80	373.24	193.95	156.15	131.49	97.39	248.60	47.26	194.77
26.30	206.28	105.48	170.12	154.50	110.95	344.35	378.86	36.98	216.14
209.57	112.18	442.61	176.28	358.32	98.21	199.70		209.57	197.65
12.33	437.21	62.48	164.37	65.75	119.99	239.15		286.82	67.80
229.29	125.74	156.60	167.24	217.78	115.47	346.40		255.18	205.05
112.59	174.64	245.85	187.38	162.72	306.54	778.27		82.59	199.29
47.67	174.23	194.73	233.40	218.61	140.12	295.86		152.86	167.24
61.64	495.97	36.51	207.51	232.58	297.91	238.74		336.54	161.49
107.66	249.01	167.15	152.86	184.09	348.04	161.90		87.53	697.32
147.93	136.83	166.74	122.04	248.60	355.03	175.87			223.54
88.76	65.34	329.83	46.43	39.86	266.68	274.08			38.22
122.86	245.32	62.07	172.58	147.52	147.11	151.63			43.56
96.98	58.35	194.33	46.84	151.22	309.01	361.19			288.05
106.02	252.30	288.45	88.76	126.97	52.19	184.50			89.99
257.23	335.31	88.44	361.60	219.43	352.98	200.53			210.80
63.28	337.77	487.65	178.34	285.17	42.32	119.58			57.12
50.54	320.92	192.30	117.11	307.78	170.94	159.02			165.19
76.84	74.38	505.50	50.54	56.30	129.03	179.16			244.08
71.50	225.59	211.77	106.43	144.64	315.58	102.73			239.15
62.87	330.79	222.32	77.66	291.34	57.94	145.87			470.09
30.41	94.51	108.32	78.07	150.81	228.47	436.39			290.11
71.50	332.43	88.44	321.75	192.72	74.79	243.67			38.22
240.39		168.77	33.70	124.92	207.10	190.66			599.93

**TABLE A-7 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 1 MALE RAW DATA: AP 10.0 MG/KG/DAY.**

272.85	167.96	160.26	97.39	100.67	164.78	124.10
13.56	193.11	118.75	28.76	136.42	276.55	160.26
133.55	162.68	185.73	251.89	70.68	318.87	247.78
358.73	212.59	68.62	182.86	310.65	433.93	177.10
341.06	150.11	71.91	294.21	69.44	361.19	167.65
114.65	65.72	71.50	362.84	155.74	238.74	278.19
45.61	168.77	154.09		145.87	49.31	99.03
311.06	353.77	154.50		46.43	249.01	177.93
46.02	119.28	222.72			142.59	
71.50	174.45	111.36			424.89	
51.36	198.39	174.64			163.13	
150.39	327.40	43.15			283.53	
439.27	112.38	101.09			289.28	
131.90	125.36	78.07			202.99	
273.67	356.20	64.92			102.73	
124.10	77.49	432.28			80.54	
54.65	130.23	147.93			411.33	
27.94	226.38	219.02			187.38	
40.68	467.36	34.11			180.39	
135.19	101.83	58.76			84.65	
283.53	72.62	76.43			214.09	
10.27	165.52	121.22			269.15	
26.71	77.89	51.78			128.21	
111.77	202.44	90.81			362.84	
29.59	142.81	201.76			213.26	
94.92	112.78	69.03			268.33	
129.85	126.58	99.85			243.67	
59.99	67.75	156.15			343.11	
83.42	126.17	69.86				
141.77	64.10	100.26				
123.27	242.20	46.02				
171.76	137.94	75.20				
57.53	69.78	133.55				
	212.99	264.22				

**TABLE A-7 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 1 MALE RAW DATA: AP 10.0 MG/KG/DAY.**

148.89      141.35  
 191.49      222.72  
 363.10      216.14  
 129.42      64.92  
 117.25      34.52  
 146.46      109.30  
 142.40      272.44  
 191.49      159.85  
             222.72  
             131.08  
             84.24  
             96.57  
             151.63  
             97.80  
             343.94  
             192.72  
             82.59  
             13.97  
             99.85

115.60      255.03      163.76      143.46      214.62      225.07      270.34      360.41      139.56      209.18  
 83.50      177.56      95.97      73.10      113.38      139.47      154.13      222.37      87.36      125.29

Group Mean                      209.70  
 Group StDev                     73.77

**TABLE A-8. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 2 MALE RAW DATA: AP 3.0 MG/KG/DAY.**

67A	68A	69A	71A	72A	74A	270	273	278	280
96.98	303.25	163.54	99.03	216.86	88.35	210.39	705.13	336.95	199.29
179.98	133.96	145.87	43.56	67.10	59.99	493.10	279.01	317.64	176.28
262.16	140.12	490.22	533.37	200.90	269.97	452.83	228.47	200.12	197.65
661.98	481.59	398.18	265.45	90.43	47.67	453.65	315.99	151.63	78.07
79.72	578.57	59.58	374.75	205.40	216.14	589.66	560.90	292.16	58.35
168.06	85.06	209.98	161.90	125.61	122.45	59.58	165.19	225.18	94.92
246.96	232.58	89.17	58.35	131.75	455.70	75.20	49.31	357.08	108.07
286.41	173.82	227.65	306.54	139.93	183.27	166.83	160.26	51.78	63.28
620.89	325.03	58.35	232.99	133.80	440.50	269.97	189.84	170.12	325.03
180.39	60.82	312.71	188.20	297.87	237.92	141.35	118.34	160.67	235.45
388.73	139.71	79.72	69.86	137.07	431.46	164.78	106.43	165.60	138.89
231.35	62.05	309.01	211.62	63.83	85.06	613.91	174.64	463.92	127.79
152.86	121.22	165.19	67.80	67.51	80.95	507.07	491.04	115.88	116.70
64.10	277.78	207.10	173.41	90.83	62.05	267.09	28.35	168.48	73.14
355.85	102.32	103.96	103.55	205.81	99.85	73.97	79.31	542.41	163.13
337.36	168.48	45.61	125.74	134.21	159.44	436.80	189.02	320.92	98.62
212.03	205.05	244.49	300.79	123.57	51.36	76.84	231.35	213.68	185.73
191.49	147.52	488.58	69.03	79.38	55.47	638.15	96.15	339.42	179.98
120.40	201.76	634.04	151.63	391.57	143.82	87.11	278.19	105.61	184.91
179.57	96.98	219.02	94.92	55.65	200.53	119.99	219.84	223.54	295.45
109.71	348.46	207.92	71.50	40.92	34.93	290.52	110.54	47.67	170.94
42.32	162.72	351.33	259.70	90.02	154.50	199.29	161.49	202.58	171.76
195.18	119.17	110.95	120.40	246.32	123.69	149.57	190.66	102.73	133.55
281.48	144.64	163.13	226.41	90.43	45.20	386.67	394.48	119.17	132.73
111.36	171.76	140.53	73.55	147.30	69.03	146.70	95.33	134.78	103.14
85.47	75.61	149.16	193.95	225.86	89.58	462.28	189.02	172.58	147.11
103.96	124.92	100.67	402.70	91.65	152.04	235.87	101.91	283.94	649.66
233.81	168.06	453.65	190.25	358.43	62.05	382.56	140.53	362.02	553.91
202.99	173.82	168.48	148.34	208.67	149.57	217.78	115.88	76.84	184.50
171.35	119.99	166.42	34.11	47.46	104.78	105.61	274.90	133.14	551.04
59.99	253.53	135.19	249.43	95.74	168.06	106.43	88.35	514.88	123.27
243.26	432.69	109.71	140.53	355.56	60.82	48.49	131.49	96.98	310.65



**TABLE A-8 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 2 MALE RAW DATA: AP 3.0 MG/KG/DAY.**

139.30	135.60	514.88	117.11	154.66	189.02	186.97	115.06	160.26	117.52
281.07	241.21	540.35	140.94	154.66	180.39	359.14	89.17	201.35	162.72
339.42	100.26	64.92	82.59	195.58	96.15	624.59	60.82	219.02	231.76
273.67	241.62	242.44	116.70	277.82	137.25	189.84	152.45	571.58	264.63
347.63	339.83	1083.99	276.55	273.32	159.02	200.94	126.56	643.90	588.43
292.57	425.71	353.80	257.23	176.35	159.02	78.90	133.96	89.99	175.05
412.56	148.75	92.87	366.12	35.19	145.46	528.44	146.29	126.15	377.63
695.27	329.14	245.32	92.87	87.56	181.62	377.22	70.27	210.80	325.03
372.70	85.88	323.39	147.52	112.11	112.18	277.37	36.98	212.44	221.48
260.93	199.29	41.91	189.02	95.74	23.01	139.30	180.39	216.96	280.65
54.24	167.24	260.11	348.87	270.87	57.94	157.38	253.12	348.87	77.25
186.97	62.46	126.56	134.78	220.54	174.64	233.81	324.21	167.65	151.63
259.70	152.86	364.89	144.64	88.79	207.51	509.12	339.42	214.09	67.39
576.92	260.52	458.17	61.23	130.52	161.08	326.68	562.95	227.65	85.88
147.52	200.12	324.21	381.33	314.24	24.66	24.24	185.32	158.20	315.17
400.23	364.89	317.64	87.94	160.39	370.64	339.00	191.08	119.17	123.69
147.11	71.91	393.66	324.62	83.88	313.94	258.88	369.00	141.35	27.94
407.63	677.19	765.12	277.78	227.50	64.51	72.73	487.34	184.91	129.44
157.79	416.26	355.85	88.76	82.65	88.76	369.82	115.06	178.34	129.44
897.44	244.91	414.20	126.97	118.25	127.79	234.63	221.48	175.46	273.67
747.86	97.80	204.22	241.21	213.17	204.22	209.57	236.69	380.92	123.69
55.88	150.39	490.63	159.85	243.45	74.79	258.88	115.06	152.45	83.83
33.28	161.90	306.95	101.91	242.63	136.01	454.06	190.25	453.65	140.53
415.02	173.82	407.22	173.82	103.93	542.41	125.74	133.96	643.49	190.66
207.51	145.05	724.44	79.72	32.73	230.11	301.61	130.26	312.71	205.05
87.94	289.69	276.13	170.94	243.45	157.79	529.67	186.97	131.08	355.85
453.24	184.09	210.80	30.82	177.17	67.80	272.44	113.00	150.39	52.60
192.72	175.46	42.32	222.72	149.35	106.43	115.88	185.73	132.73	423.65
62.05	220.25	349.28	480.77	117.84	83.83	424.89	122.86	241.21	87.53
524.33	61.23	21.37	421.19	117.43	147.11	189.02	107.25	372.70	204.64
436.80	138.89	80.13	367.36	70.38	65.75	401.46	114.23	159.85	209.16
91.63	119.99	35.75	149.16	83.47	82.59	168.89	262.57	44.38	183.27
153.68	71.91	255.18	410.09	99.84	230.93	306.95	83.42	98.62	67.80
171.76	105.19	560.90	171.35	148.53	71.91	419.54	161.49	52.60	121.22

**TABLE A-8 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 2 MALE RAW DATA: AP 3.0 MG/KG/DAY.**

111.77	94.51	763.07	83.42	140.75	104.37	360.78	222.72	349.28	85.88
189.84	256.00	384.62	151.63	127.66	221.48	308.60	156.97	392.83	224.77
49.31	140.53	256.00	380.92	124.80	73.55	276.96	77.25	251.89	131.90
232.58	153.27	1883.22	469.68	181.26	121.63	331.61	241.62	144.64	98.21
285.17	227.24	325.44	41.09	202.54	62.05	159.44	73.55	248.19	166.42
220.25	128.21	182.86	355.85	139.93	249.84	168.48	186.14	144.64	252.71
231.35	91.63	76.84	48.08	184.12	64.51	444.61	140.53	139.71	13.56
247.78	127.38	121.63	244.08	59.74	77.66	108.07	99.85	162.31	20.55
296.68	175.87	115.47	442.97	184.53	30.41	146.70	137.66	144.64	46.84
275.72	295.04	42.74	175.87	124.80	106.02	201.35	152.86	224.36	140.12
335.31	64.10	58.76	263.40	130.11	79.31	260.52	188.61	388.73	147.93
436.39	119.58	571.99	302.43	150.16	75.61	73.14	258.05	159.44	490.63
378.86	230.93	488.58	322.98	152.62	295.86	105.19	91.63	188.20	148.75
113.00	310.24	109.30	440.91	34.78	61.64	186.14	62.05	152.04	162.72
240.80	253.12	121.63	283.12	18.00	40.68	342.70	128.62	312.30	73.55
141.35	358.73	139.71	88.76	87.97	264.22	294.21	253.12	602.40	168.89
152.45	155.33	337.36	260.93	70.38	358.32	301.61	145.05	191.90	174.64
355.03	167.24	117.11	160.26	113.34	110.54	460.22	282.30	173.82	166.83
196.42	96.57	128.21	587.61	238.95	85.47	169.30	137.66	399.82	122.45
342.70	134.78	80.95	103.14	58.92	72.73	104.78	83.01	150.39	170.12
130.26	105.61	438.45	99.03	153.03	53.83	193.95	176.28	260.11	107.25
299.97	224.77	73.14	79.72	41.33	92.46	466.80	513.64	116.70	278.19
142.18	94.10	512.00	129.44	13.50	107.25	123.27	257.23	149.98	230.93
469.26	136.42	167.24	49.31	51.56	94.10	158.20	176.69	104.78	431.05
166.01	94.92	313.94	40.27	51.96	43.56		115.47	164.37	157.79
169.71	52.19	184.50	50.54	82.24	50.54		774.16	315.99	109.30
171.76	253.95	415.43	208.74	27.82	167.24		171.76	123.27	168.48
595.41	196.83	280.65	156.15	99.84	245.32		327.09	25.89	208.74
20.55	407.63	162.31	104.37	65.88	147.52		400.64	204.64	166.83
101.91	69.86	175.05	161.08	139.93	118.75		140.12	58.35	501.32
69.44	60.40	78.07	85.06	49.92	70.68		163.54	187.38	
251.07	80.54	50.54	359.96	107.61	59.17		239.15	117.52	
253.95	443.79	215.73	284.76	18.00	262.57		117.93	280.24	
58.76	93.28	95.74	237.51	153.44	46.84		326.68	108.07	

**TABLE A-8 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 2 MALE RAW DATA: AP 3.0 MG/KG/DAY.**

172.17	224.36	699.38	147.93	52.37	129.85	69.03	92.46
272.03	135.60	462.28	130.67	124.80	124.10	56.71	145.05
232.99	257.64	364.89	263.81	45.42	267.92	111.77	200.12
44.38	129.03	244.91	225.18	22.50	64.10	262.16	396.12
321.75	262.99	153.68	341.88	294.60	307.78	451.18	260.93
78.49	187.38	25.07	207.92	30.28	301.61	356.67	159.02
94.51	125.33	304.49	329.55	33.96	119.99	663.22	244.08
67.39	276.55	124.92	78.49	94.11	328.73	215.73	191.90
100.67	412.56	321.75	538.71	11.05	193.54	30.00	251.48
262.57	292.16	255.59	174.64	38.05	121.63	123.69	267.51
140.53	209.98	55.06	229.70	29.87	72.73	84.65	198.47
100.67	155.74	262.99	322.16	171.44	167.65	161.90	98.62
197.24	394.48	251.48	20.96	70.79	102.73	237.92	251.07
98.21	288.87	290.11	320.51	88.38	87.53	178.75	515.29
132.73	122.04	154.09	75.61	70.38	126.97	509.94	
299.15	429.82	425.71	288.87	85.92	37.80	825.12	
274.49	113.41		158.61	62.19	50.13	101.50	
241.62	72.32		276.55	38.46	146.29	324.21	
135.19	124.10		240.80	56.06	104.78	385.85	
278.60	137.66		405.98	107.61	239.97	245.32	
235.04	168.06		101.91	94.52	184.50	615.14	
76.02	176.69		223.54	151.39	1.64		
104.37	24.66		264.63	27.82	220.25		
73.97	203.81		223.95	89.61	207.92		
106.43	63.28		114.23	115.38	97.80		
198.47	222.30		318.05	37.23	242.85		
153.68	216.96		281.48	180.03	152.45		
329.96	133.14		161.08	35.60	164.37		
72.73	166.83		396.53	80.61	212.44		
417.08	155.33		104.78	108.84	279.01		
125.74	113.41		346.40	116.20	104.78		
308.19	66.57			72.01	125.74		
380.92	65.34			33.14	48.49		
87.11	372.29			207.45	243.26		

**TABLE A-8 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 2 MALE RAW DATA: AP 3.0 MG/KG/DAY.**

86.70				54.42	96.57				
275.31				126.84	147.11				
					547.34				
					338.18				
					195.18				
					375.16				
					421.19				
					164.78				
					95.33				
					276.13				
					425.71				
					317.23				
					276.55				
231.27	191.71	276.06	208.06	124.28	156.84	267.16	214.84	223.47	190.38
154.67	113.92	240.71	124.42	78.55	108.10	152.43	155.37	130.04	126.88
					Group				
					Mean				
					Group				
					StDev				
						208.41			
						46.14			

**TABLE A-9. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 MALE RAW DATA: AP 1.0 MG/KG/DAY.**

75A	76A	77A	80A	82A	84A	282	286	288	293
229.62	50.71	201.35	570.76	359.55	326.27	95.33	32.46	163.13	100.67
190.27	331.86	124.92	291.34	360.78	65.34	265.45	113.82	125.74	152.86
189.05	161.87	279.42	257.64	405.16	651.71	212.03	140.53	119.58	459.81
169.18	462.09	663.22	317.23	405.57	117.52	180.80	104.37	110.13	127.38
436.94	129.01	150.39	441.73	309.42	39.45	237.51	248.19	170.12	577.75
122.52	363.10	267.09	898.26	349.28	617.19	298.73	107.66	69.44	179.57
319.69	417.87	211.62	117.11	792.24	196.83	239.97	83.83	106.02	90.81
129.42	432.07	258.47	1113.58	347.63	238.74	389.96	92.87	71.50	130.26
830.05	67.35	105.61	151.63	106.84	636.10	494.74	283.12	105.19	101.50
50.31	738.37	629.93	157.38	598.70	611.85	82.18	84.65	35.34	216.96
173.23	284.80	183.27	294.63	362.43	343.94	177.93	277.37	62.05	74.79
490.08	165.52	358.32	344.35	256.82	106.84	333.66	155.33	43.15	129.85
186.62	89.66	183.68	131.49	484.47	339.00	101.50	339.42	58.35	204.22
434.10	263.30	224.77	222.72	138.07	531.31	319.28	224.36	43.97	142.59
168.77	170.80	279.83	592.13	198.88	692.39	210.39	163.96	120.40	106.02
77.89	219.48	512.41	2404.26	612.67	200.12	355.03	540.35	49.31	88.35
645.06	178.51	53.83	171.76	217.78	434.75	193.54	138.48	96.57	55.88
497.38	180.94	242.03	279.42	232.99	196.42	432.69	143.00	68.62	274.49
302.24	617.47	171.76	428.99	321.75	554.32	53.42	208.33	73.55	202.99
131.04	253.56	129.85	1086.87	302.43	899.49	57.53	196.01	48.90	71.91
370.40	1243.05	130.67	269.97	209.98	313.53	276.96	186.56	62.46	126.15
231.65	118.87	281.48	434.34	412.97	834.57	286.82	141.35	77.66	118.34
235.30	377.70	128.21	101.91	272.44	167.24	71.91	212.85	77.25	219.43
172.02	716.87	71.50	571.99	442.55	719.92	20.96	159.44	344.76	177.10
367.56	67.75	118.75	319.28	375.99	353.39	179.98	324.21	97.80	148.34
104.26	785.43	242.03	613.08	438.03	2626.97	152.45	134.37	246.96	196.83
154.57	305.90	576.10	369.41	226.82	717.87	236.69	73.55	118.34	106.02
139.15	47.47	270.38	239.97	604.87	323.39	324.62	136.01	60.40	195.60
263.70	2.43	331.61	42.74	268.74	258.88	83.83	381.74	73.14	62.87
420.30	124.14	309.83	631.58	309.01	412.15	234.63	594.59	95.33	358.32
451.54	30.83	223.54	193.13	309.42	839.09	89.58	188.20	25.89	183.27
120.49	475.48	441.73	198.88	645.55	1031.39	107.66	277.78	62.87	138.48

**TABLE A-9 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 MALE RAW DATA: AP 1.0 MG/KG/DAY.**

575.68	222.73	194.36	145.05	263.81	214.91	246.96	301.20	82.59	135.60
252.34	61.67	96.98	446.25	432.28	735.13	309.83	111.36	61.23	66.57
168.77	318.88	672.26	320.92	290.93	1129.60	179.16	118.75	147.52	246.14
359.45	118.87	189.43	61.64	497.21	269.56	441.73	108.48	155.74	259.29
105.08	197.57	175.87	211.21	447.07	374.75	236.69	617.60	94.51	141.35
507.93	461.68	97.39	196.83	798.82	657.05	161.49	211.62	85.06	135.60
110.76	152.54	121.22	565.42	346.40	981.67	93.28	316.40	166.42	386.67
671.83	152.54	315.99	148.75	374.34	232.17	87.53	468.44	86.70	497.21
558.64	374.86	240.39	380.10	130.67	816.49	103.96	192.31	74.79	285.59
354.58	96.96	222.30	113.00	445.84	238.33	61.23	324.21	162.31	192.72
277.09	176.88	101.91	567.47	783.20	1444.77	108.07	49.72	55.06	521.45
422.74	356.20	156.15	111.77	160.67	1041.67	427.35	209.57	152.45	50.54
574.87	141.99	81.77	305.72	402.29	199.29	324.62	347.63	110.54	381.74
671.83	305.08	142.59	62.05	124.51	427.76	246.96	87.11	163.54	368.18
200.41	289.67	166.42	193.54	629.52	520.63	400.23	62.87	243.26	815.66
789.08	269.79	480.36	456.94	722.80	532.96	227.24	279.83	140.94	41.50
535.11	278.31	160.26	85.06	212.85	706.36	163.13	436.80	55.88	124.51
388.66	114.00	243.26	33.70	302.43	366.54	425.71	262.57	111.36	611.44
237.33	221.51	67.80	311.88	334.48	280.65	197.24	110.54	85.88	142.18
190.27	544.85	172.58	115.47	170.12	90.81	258.05	116.70	50.13	202.99
160.25	101.83	232.99	378.45	429.41	469.68	249.01	113.00	41.50	39.04
139.97	437.75	77.66	346.81	981.26	395.30	180.80	225.18	123.27	248.19
281.55	760.68	124.10	108.07	86.70	906.89	140.94	100.26	300.38	304.90
277.09	216.24	304.08	274.90	612.26	283.53	154.09	140.53	80.95	146.29
400.02	255.18	79.31	652.12	110.13	1345.33	415.43	304.08	148.34	73.14
292.91	312.39	231.35	442.14	315.99	803.34	69.44	74.38	154.50	80.54
855.21	208.53	245.73	313.53	315.99	3335.39	182.04	90.81	105.61	215.73
520.91	307.52	30.00	104.78	96.57	745.40	88.76	90.40	73.97	96.57
71.40	378.11	211.62	112.18	649.24	181.21	431.46	30.82	129.85	156.97
301.03	471.01	98.62	265.86	292.57	564.60	242.44	216.96	105.19	352.56
413.00	239.77	53.83	242.85	470.91	275.31	282.30	199.29	173.00	123.27
198.79	79.92	80.95	183.68	187.79	316.40	247.37	94.10	65.34	166.83
342.81	277.90	215.32	309.42	126.56	284.76	353.39	108.07	39.45	420.78
164.31	425.98	242.44	163.54	328.32	1527.78	88.76	45.61	31.64	204.22

**TABLE A-9 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 MALE RAW DATA: AP 1.0 MG/KG/DAY.**

14.20	306.30	121.22	578.57	56.71	343.52	168.06	138.48	59.17	29.59
609.76	221.10	338.18	1.64	308.19	404.34	312.71	325.03	143.00	43.15
408.13	242.20	478.30	220.25	149.16	239.97	326.27	125.33	193.54	45.20
132.26	167.15	209.16	359.96	283.94	205.46	169.71	124.51	119.58	193.95
165.52	308.74	25.07	936.06	131.49	241.21	137.25	97.80	60.40	216.14
239.36	178.91	98.21	977.98	319.69	692.80	181.62	113.41	100.67	341.47
324.56	335.51	120.81	709.65	383.38	678.01	134.78	73.55	189.84	183.68
249.91	350.93	72.32	750.74	133.96	50.54	232.58	64.10	144.23	100.67
456.41	340.79	149.57	117.52	267.09	236.28	209.16	219.84	170.94	142.59
267.76	582.17	131.08	189.43	626.64	786.08	895.38	50.54	64.92	122.45
330.64	248.29	271.20	706.36	326.68	310.65	173.41	327.91	113.41	167.65
518.89	212.18	117.52	1830.21	385.44	1000.58	53.01	46.02	95.33	14.79
170.39	198.79	154.92	291.75	559.25	1346.57	275.31	101.09	78.07	74.38
133.47	77.89	61.64	239.15	651.71	776.22	418.31	43.97	121.63	87.53
244.64	101.02	524.74	357.50	473.78	1296.43	261.75	547.34	58.35	151.22
188.24	360.66	312.30	350.10	556.79	1212.61	203.40	176.69	56.30	99.03
124.14	229.62	186.14	115.47	286.00	618.01	328.32	90.40	73.14	265.04
255.18	29.62	57.94	274.08	231.35	297.91	64.10	48.90	154.50	242.85
196.36	73.43	166.83	498.85	592.54	447.49	472.96	108.48	46.84	66.98
150.92	84.79	84.65	110.54	319.28	420.78	178.75	133.96	73.97	221.89
156.19	507.53	55.88	376.40	245.73	219.02	93.28	104.78	44.38	138.89
275.06	155.38	175.05		641.03	494.33	479.54	133.55	203.81	266.68
223.94	116.03	215.73		629.52	303.67	322.98	281.89	101.09	51.78
304.68	37.73	189.43		711.70	341.88	229.29	153.68	47.67	125.74
71.40	326.99	348.46		645.14	679.24	262.57	90.40	240.80	195.18
295.35	577.31	253.12		223.54	385.85	115.88	305.31	61.64	126.15
111.16	252.75	152.45		372.70	961.13	341.88	289.28	122.04	183.27
284.39	941.62	60.40		402.70	403.11	454.88	109.71	156.56	302.43
90.07	212.59	392.42		833.33	1514.22	137.25	85.06	108.89	249.84
256.40	385.82	132.73		113.00	824.29	289.69	152.45	100.26	125.33
319.69	280.34	190.25		267.51	682.53	231.35	318.87	268.74	386.26
69.78		160.67		276.13	618.43	347.22	322.98	41.91	169.30
102.64		299.56		434.75	4121.06	170.94	110.13	142.59	430.64
379.33		160.67		88.76	759.78	368.59	64.92	175.87	203.81

**TABLE A-9 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 MALE RAW DATA: AP 1.0 MG/KG/DAY.**

185.40	33.28	505.42	223.54	161.90	106.84	207.92	98.62
199.60	80.95	222.30	683.76	329.55	94.92	163.13	41.09
161.87	267.92	385.03	2034.02	216.55	184.50	69.44	478.72
229.22	114.65	409.27	405.98	380.92	43.56	572.81	51.36
391.09	43.97	335.31	103.14	687.87	408.45	269.15	69.03
494.54	173.00	256.41	710.47	370.23	138.89	46.84	117.93
401.64	399.00	516.93	295.45	521.45	40.27	165.60	346.81
308.74	334.07	609.80	565.01	129.03	124.92	207.92	50.13
90.88	123.27	438.86	110.54	581.85	106.43	40.68	107.66
121.71	340.65	925.38	392.42	651.71	164.78	78.90	118.75
232.46	98.62	243.26	419.54	755.67	65.34	116.29	180.80
549.72	136.42	218.20	439.68	396.53	162.31	213.26	31.64
365.94	145.05	96.15	660.75	191.49	326.27	71.50	295.04
199.20	59.17	603.22	915.11	135.19	228.88	232.99	325.03
253.56	240.80	159.02	501.32	493.92	111.36	138.89	294.63
700.23	125.74	476.25		353.80	110.95	72.32	53.42
351.33	152.86	271.20		164.37	155.33	76.84	215.32
239.36	181.21	145.87		178.75	256.82	57.12	159.44
305.90	247.37	109.30		123.27	213.26	272.85	165.19
221.51	62.87	125.33		448.31	265.86	125.33	119.58
	244.91	146.70		645.14	405.98	92.46	161.49
	118.34	467.62		410.50	94.92	92.87	132.73
	419.13	376.40		1270.55	30.41	329.14	75.61
	220.25			423.24	248.60	89.99	46.84
	295.04			153.27	487.76	351.74	57.94
	78.49			348.46	87.11	148.34	111.77
	210.39			567.88	46.43	108.48	193.13
	125.74			120.81	74.38	133.14	303.67
	239.97				46.02	138.89	176.28
	68.21				162.72	168.06	73.97
	41.91				59.99	41.91	113.00
	54.65				189.43	147.52	63.69
	98.62					121.22	32.46
	272.03					144.23	138.89



**TABLE A-9 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 MALE RAW DATA: AP 1.0 MG/KG/DAY.**

281.48	50.13	45.20
444.20	117.93	281.48
94.51	44.79	297.50
102.73	156.97	238.33
273.26	77.66	157.79
260.93	155.33	247.37
251.89	115.88	
138.89	103.14	
249.84	418.31	
148.34	147.52	
133.96	100.26	
138.89	58.35	
88.35	105.61	
264.63	141.35	
439.68	64.92	
244.91	206.69	
152.86	87.11	
131.90	73.97	
248.60	43.56	
65.34	183.68	
283.12	41.09	
239.56	109.71	
276.55		
48.49		
215.73		
116.70		
28.35		
106.43		
130.26		
95.74		
463.10		
239.15		
144.64		
342.70		

**TABLE A-9 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 3 MALE RAW DATA: AP 1.0 MG/KG/DAY.**

145.87									
254.36									
70.68									
14.79									
107.25									
124.92									
430.23									
339.42									
119.99									
223.13									
302.02									
149.57									
204.22									
136.83									
294.17	285.03	200.61	379.11	370.13	621.47	272.49	180.15	120.44	184.22
174.45	207.78	125.46	362.20	196.02	584.89	180.77	123.43	77.98	130.36
			Group Mean		290.78				
			Group StDev		143.21				

**TABLE A-10. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 MALE RAW DATA: AP 0.1 MG/KG/DAY.**

85A	86A	87A	90A	91A	92A	297	301	303	306
105.19	198.06	712.94	221.07	250.66	184.09	60.40	196.83	133.55	79.72
32.87	208.74	189.43	89.58	74.38	191.90	396.94	316.82	239.56	79.72
402.29	160.26	276.96	354.62	277.37	212.03	280.65	271.61	113.41	255.59
430.23	404.75	180.39	195.18	90.81	422.83	245.32	113.82	101.50	426.53
260.93	309.83	121.63	89.17	461.87	87.11	232.99	255.18	361.19	225.59
543.23	124.10	373.93	313.94	126.15	211.21	176.69	431.05	232.99	532.13
95.33	313.94	244.91	434.34	235.87	187.79	209.98	307.36	145.46	54.24
229.70	73.97	212.85	195.60	387.49	139.71	144.64	219.43	623.36	100.26
201.35	160.67	456.11	732.66	217.37	106.84	356.67	294.63	264.22	166.01
459.81	21.78	315.17	155.33	410.91	159.85	175.87	366.12	201.76	417.08
301.20	92.87	130.26	345.58	279.42	122.86	62.05	547.75	128.62	244.49
129.03	278.60	179.57	103.55	441.32	112.18	68.21	230.93	305.72	149.57
378.86	163.96	119.17	148.34	225.18	180.39	85.06	226.41	244.08	185.32
393.66	176.69	444.20	520.63	175.87	64.92	161.90	209.98	103.55	176.69
286.00	123.27	137.66	139.71	319.28	131.90	148.34	244.49	167.24	279.83
126.56	195.60	216.14	147.11	64.92	161.08	286.41	269.97	251.89	239.97
394.07	137.66	225.59	521.86	352.15	107.66	26.71	169.71	62.05	223.13
664.86	559.67	596.65	19.31	286.82	446.66	475.84	315.58	87.94	211.21
362.84	126.97	348.87	239.97	179.16	216.14	281.89	130.26	254.77	279.01
458.17	113.00	173.82	598.29	412.56	306.95	264.22	302.02	181.62	136.83
669.38	120.81	235.87	454.06	572.40	166.42	304.08	273.26	177.10	165.19
410.91	95.74	316.40	128.62	448.72	293.39	186.56	75.61	102.73	311.06
81.77	94.51	35.75	205.87	363.25	330.38	286.82	254.77	276.96	204.22
157.38	682.53	314.76	334.90	400.64	84.24	182.04	148.34	166.83	84.24
279.83	173.82	314.35	340.24	312.71	154.50	332.43	420.37	120.81	250.25
186.14	355.44	229.29	10.27	189.84	325.44	72.32	340.24	270.38	198.06
657.87	213.26	301.61	254.36	380.51	518.16	152.04	75.61	258.88	55.88
16.03	845.25	137.66	246.55	137.25	179.57	206.28	191.49	270.79	34.11
126.97	121.22	338.59	217.37	539.12	113.82	383.38	352.98	66.98	500.49
192.72	280.65	601.17	216.55	618.01	528.85	370.64	207.51	255.18	190.66
161.49	110.54	114.65	1029.34	667.74	148.75	279.42	97.80	281.07	127.38
41.09	276.13	192.72	214.50	37.39	356.67	240.80	168.89	264.63	470.09

**TABLE A-10 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 MALE RAW DATA: AP 0.1 MG/KG/DAY.**

274.90	255.18	247.78	239.56	81.77	298.73	311.47	119.99	223.54	536.65
181.21	826.35	447.90	67.80	288.46	180.80	166.42	312.71	256.41	700.61
210.39	299.15	138.07	185.73	226.82	183.27	225.18	195.18	200.12	378.86
325.44	87.94	818.95	653.76	153.27	267.09	145.87	104.37	197.65	95.33
146.70	78.90	525.56	438.03	64.92	79.72	188.61	56.71	227.65	378.86
250.66	245.32	277.78	89.17	1320.27	229.29	379.27	133.96	93.28	333.25
244.91	356.67	260.93	345.17	412.56	162.31	283.12	195.60	251.48	401.46
215.32	295.86	219.84	57.53	277.37	240.39	107.66	179.98	183.68	135.19
292.57	383.79	150.39	821.01	359.14	186.97	355.85	80.95	364.07	178.75
195.60	368.18	164.78	260.93	96.57	344.76	825.12	439.68	796.76	109.30
280.65	34.93	270.38	326.27	123.27	257.23	218.20	173.82	90.40	136.83
478.30	277.78	88.76	67.39	321.75	122.86	223.95	199.70	142.18	177.10
733.07	247.78	380.10	226.00	169.71	153.27	383.79	107.66	569.53	117.93
131.08	154.50	507.07	335.31	598.29	31.64	594.59	320.10	561.31	224.36
186.56	471.32	136.01	158.61	923.32	39.45	306.13	304.08	145.05	647.60
192.72	74.79	417.49	233.40	375.58	137.25	178.75	116.70	144.64	262.99
159.44	138.48	72.32	302.02	516.11	499.67	182.45	266.27	170.53	242.44
490.63	416.26	338.18	414.61	365.71	322.98	213.26	225.18	485.70	180.80
477.07	137.66	125.74	519.40	161.08	127.79	278.60	253.95	84.65	149.16
379.68	186.56	488.17	388.73	223.54	102.32	173.00	410.50	50.95	153.27
217.78	893.74	241.21	119.17	253.95	245.73	385.44	338.59	30.41	301.61
504.19	109.30	120.40	253.12	306.13	150.39	298.73	317.64	268.33	236.69
119.58	238.33	228.88	205.46	789.78	467.62	588.02	96.15	160.67	120.40
301.20	158.61	198.06	667.32	615.96	198.88	110.54	265.45	318.46	288.05
282.71	198.88	18.49	428.58	110.54	177.10	83.01	121.63	159.44	320.51
14.79	183.27	176.69	195.60	102.73	179.57	235.04	32.46	115.88	73.97
615.14	55.88	382.56	318.05	119.17	196.01	255.59	108.07	110.95	208.33
194.77	805.80	97.80	197.24	170.53	66.16	308.19	117.93	101.91	278.60
210.80	317.23	243.26	407.63	293.39	569.94	277.78	181.21	50.95	246.55
311.47	202.17	24.66	304.08	760.60	108.48	439.27	154.92	108.48	205.87
453.24	87.53	146.29	172.17	168.89	140.12	379.27	150.81	209.57	318.46
164.37	277.37	63.69	315.17	784.44	299.56	319.69	251.48	210.80	558.84
247.37	158.61	101.09	510.36	50.13	195.60	260.11	123.69	189.02	97.39
168.48	46.84	267.51	330.38	181.21	792.65	132.73	122.86	233.81	175.87

**TABLE A-10 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 MALE RAW DATA: AP 0.1 MG/KG/DAY.**

109.71	94.92	326.27	32.87	207.92	463.51	27.94	393.25	195.18	451.59
161.08	199.70	231.76	255.18	149.98	211.21	222.30	104.78	62.46	247.78
287.23	149.16	165.19	372.70	426.12	286.82	103.14	301.20	77.25	95.33
188.20	299.97	311.06	189.43	313.94	417.49	110.13	143.00	58.35	216.96
87.53	659.11	149.16	261.75	373.93	380.92	194.77	216.55	30.82	641.44
60.82	235.04	173.82	865.80	486.11	275.72	164.78	225.18	99.85	145.87
113.41	115.06	477.89	584.73	151.63	132.31	259.70	178.75	217.37	702.66
127.38	216.14	193.95	616.37	344.76	216.96	136.42	76.43	136.01	149.57
242.44	283.12	173.41	345.58	270.38	112.18	229.29	185.32	631.99	376.40
239.15	104.37	417.90	186.56	93.28	205.46	324.21	221.48	168.89	128.62
189.02	494.33	168.89	272.85	415.85	253.53	187.38	68.21	186.97	126.56
30.82	638.56	251.89	315.99	243.26	243.67	230.52	161.08	52.60	64.51
311.47	212.85	79.72	482.00	402.29	83.01	123.27	130.67	106.43	176.69
452.01	217.78	242.03	29.59	313.94	174.23	241.21	498.85	100.67	187.79
505.84	873.19	214.91	208.74	145.05	391.60	163.13	123.69	127.79	212.85
387.90	186.56	216.14	301.61	76.84	126.15	227.24	148.34	94.92	195.18
178.75	139.71	290.93	186.14	284.35	110.95	316.40	113.00	128.62	589.66
470.50	96.98	142.18	39.04	257.64	162.72	27.53	123.69	68.21	164.37
271.61	255.18	237.51	232.99	291.34	588.84	55.06	227.65	313.12	475.43
48.08	699.38	272.03	97.80	147.11	170.53	422.42	294.21	134.37	516.93
190.25	101.50	159.85	78.07	252.71	168.89	203.40	205.46	207.51	149.16
461.05	251.07	432.69	291.34	479.95	143.82	373.93	146.29	258.05	66.98
436.39	202.99	357.08	484.47	529.67	151.22	522.27	260.11	237.51	94.10
144.23	190.25	571.58	218.61	57.53	87.94	360.78	94.10	334.90	872.37
150.39	917.57	154.09	126.97	205.87	151.22	496.80	202.58	45.20	372.70
50.95	200.94	311.06	229.29	112.18	172.58	197.24	81.77	638.56	765.53
1167.82	474.61	265.86	287.23	313.53	422.01	360.37	332.43	179.98	159.02
282.30	248.60	300.38	146.70	168.89	86.29	535.01	163.13	85.47	669.79
366.12	250.25	144.64	369.41	314.35	269.56	181.21	213.68	158.61	303.67
278.60	268.33	260.93	284.76	214.50	305.72	294.63	126.15	298.73	630.75
262.16	101.09	177.93	257.23	208.33	148.34	415.85	312.30	32.87	663.22
182.45	672.26	820.60	355.03	173.00	361.60	410.50	108.07	62.05	317.64
364.89	60.82	247.37	577.33	181.21	399.82	175.05	355.44	542.41	229.29
475.84	183.68	491.86	334.48	183.27	175.87	52.60	238.33	131.08	221.48

**TABLE A-10 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 MALE RAW DATA: AP 0.1 MG/KG/DAY.**

204.64	22.60	292.57	352.98	311.06	91.22	9.86	75.61	215.32	232.58
258.47	239.15	44.38	219.02	825.94	188.61	169.30	98.62	46.84	98.62
401.46	244.91	675.54	495.97	162.72	181.21	138.48	239.56	283.12	365.30
168.48	443.79	371.88	108.07	318.46	70.27	78.90	348.87	102.73	292.16
307.36	33.70	195.60	246.55	343.94	366.12	149.16	286.82	39.45	196.01
329.96	206.69	327.09	719.51	78.49	269.56	255.59	224.36	28.76	221.48
279.01	299.15	66.98	395.30	274.08	114.65	502.14	165.19	83.42	308.19
280.65	126.56	283.94	156.97	85.47	184.09	301.61	388.31	45.20	452.01
107.25	230.52	122.45	307.36	263.40	396.94	282.30	157.38	260.52	354.62
329.14	231.35	200.53	244.49	272.03	111.77	166.42	113.41	58.35	320.51
72.32	53.01	317.64	562.95		111.36	218.61	361.19	49.31	445.43
108.89	103.55	124.92	262.99		390.78	178.34	185.32	88.35	558.43
198.47	652.12	174.23	214.91		67.39	363.66	186.97	32.46	88.35
588.84	191.90	174.23	291.34		312.71	151.63	79.72	191.49	239.56
471.32	82.18	26.30	179.57		260.11	193.13	149.98	194.36	451.18
327.50	204.22	234.22	487.34		181.21	156.97	221.89	146.29	103.96
274.08	294.63	219.43	516.93		106.84	155.33	83.83	223.95	186.56
	152.86	267.51	473.37		418.72	148.75	27.94	48.90	133.55
	113.82	315.99	185.73		216.55	243.26	119.58	249.01	135.60
	109.30	307.78				250.66	135.19	73.97	355.03
	640.20	498.44				55.88	147.93	377.63	37.80
	44.38	90.40				218.61	103.96	155.74	177.52
	145.87	73.55				329.96	80.95	76.43	277.37
	180.39	415.85				175.46	246.55	116.29	
	276.55	283.12				378.45	164.37	166.42	
	213.68	258.05				248.60	1292.32	214.91	
	242.85					946.75	67.80	147.11	
	97.39						39.86	55.06	
	273.67						97.39	418.31	
	115.88						33.28	304.90	
	32.87						122.04	269.97	
	177.52						317.23	140.12	
	482.41						202.99	213.68	
	158.61						49.72	142.18	

**TABLE A-10 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 MALE RAW DATA: AP 0.1 MG/KG/DAY.**

211.62	171.35	145.05
292.16	114.23	266.27
59.17	84.65	207.10
72.73	48.49	353.80
187.38	55.47	322.16
248.60	221.89	449.95
196.83	138.89	69.03
242.44	126.97	273.67
694.44	187.38	67.80
245.32	80.54	666.50
102.32	83.83	89.17
906.48	157.79	95.33
408.45	205.87	373.93
465.16	83.01	141.77
289.69	171.76	187.79
197.65	182.45	192.72
20.14	46.84	440.91
232.17	148.34	168.48
176.69	42.74	886.75
80.13	49.31	
265.86	251.07	
32.46	117.52	
59.58	99.44	
161.49	137.25	
452.83	73.97	
321.34	252.30	
236.69	234.22	
293.39	71.09	
172.58	131.90	
800.05	93.69	
361.60	378.45	
269.15	256.41	
	113.00	
	173.82	

**TABLE A-10 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 MALE RAW DATA: AP 0.1 MG/KG/DAY.**

105.19  
26.71  
184.50  
145.87  
120.40  
82.59  
105.19  
134.37  
745.81  
611.03  
57.94  
119.17  
170.94  
130.67  
94.10  
261.34  
150.39  
75.61  
72.32  
207.10  
365.30  
88.35  
97.80  
165.19  
117.11  
290.11  
119.99  
378.86  
126.15  
146.29  
76.84  
202.99  
198.06  
403.93



**TABLE A-10 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 4 MALE RAW DATA: AP 0.1 MG/KG/DAY.**

							375.16		
							120.40		
							78.90		
							118.34		
280.98	256.36	261.67	303.47	303.91	225.23	250.13	193.47	203.19	271.87
176.22	199.34	154.81	185.79	205.81	133.11	145.55	136.13	151.08	175.66
				Group Mean			255.03		
				Group St Dev			38.19		

**TABLE A-11. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 5 MALE RAW DATA: AP 0 MG/KG/DAY.**

95A	96A	97A	98A	100A	101A	309	314	317	321
293.39	94.92	223.95	136.42	156.56	88.38	45.20	823.88	254.36	177.93
153.27	607.74	420.78	493.10	205.05	189.44	705.54	408.45	373.93	172.17
16.44	147.93	119.58	117.11	117.52	253.27	539.94	249.01	127.79	121.22
22.60	712.53	170.53	324.62	146.70	34.37	693.21	920.04	982.08	232.58
542.41	403.93	436.39	157.79	367.77	472.99	238.33	350.10	213.68	252.71
24.66	332.43	494.74	102.73	331.61	6.96	132.31	260.52	189.84	420.78
188.61	348.46	178.75	426.94	161.49	143.21	145.87	344.76	441.32	367.36
339.83	613.08	154.92	230.11	298.32	223.40	482.41	578.98	251.48	329.55
492.28	210.80	291.75	214.91	219.43	38.05	391.60	330.38	182.45	70.68
408.86	525.97	209.16	780.33	166.01	76.92	274.90	163.96	126.15	358.32
521.86	92.05	350.92	62.87	233.40	308.51	503.37	223.54	324.62	181.21
445.43	308.60	433.51	118.34	143.00	81.42	405.16	347.63	139.71	197.65
477.07	795.53	307.36	334.48	163.13	243.86	213.68	302.84	1004.27	433.93
303.67	477.07	47.26	201.76	91.63	391.98	77.25	641.44	537.48	168.06
358.32	285.17	209.16	280.24	350.92	82.65	304.49	364.07	171.76	185.73
419.13	899.90	64.92	261.75	539.94	332.65	195.18	223.54	479.13	140.12
440.09	1011.67	217.37	199.29	699.38	171.85	62.46	149.98	293.39	188.61
399.41	285.17	373.93	291.75	233.40	74.06	317.23	166.01	77.66	161.08
126.97	511.59	219.02	248.19	392.01	143.62	592.95	289.28	329.96	147.52
377.63	571.58	133.96	274.08	327.91	412.03	53.83	183.68	465.16	96.15
81.36	290.52	138.48	381.74	147.52	96.15	297.09	234.22	512.41	144.23
735.13	730.61	215.73	242.03	522.68	516.77	227.24	164.78	79.72	310.24
131.08	465.16	120.81	151.63	362.84	196.40	38.63	410.09	201.76	87.94
636.10	221.07	262.99	464.33	258.47	218.49	580.62	329.14	99.03	392.83
110.54	170.53	94.92	230.52	93.28	546.64	258.05	271.61	174.23	117.52
369.00	466.80	100.67	76.02	131.49	223.40	136.83	454.06	168.89	707.59
28.76	243.67	477.48	110.13	276.13	646.89	193.95	200.94	247.37	258.47
625.00	458.99	546.11	359.96	46.02	60.97	226.00	493.51	179.98	358.73
184.91	292.16	309.42	105.19	130.67	91.65	405.57	287.23	36.57	299.97
408.45	1408.20	216.55	166.42	145.87	116.61	57.12	346.40	190.25	362.02
303.25	406.81	106.02	91.22	334.90	121.93	264.22	254.77	202.17	174.23
407.63	827.58	164.78	537.89	297.09	206.63	240.39	385.03	218.61	214.91

**TABLE A-11 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 5 MALE RAW DATA: AP 0 MG/KG/DAY.**

130.26	207.51	320.51	254.77	259.70	291.32	233.81	168.06	664.86	311.88
343.94	220.25	283.94	243.67	305.31	135.02	250.25	470.50	257.23	295.86
199.70	110.95	386.26	175.87	294.63	106.79	887.99	230.52	417.49	283.12
660.75	123.27	347.63	339.42	73.14	349.02	145.05	728.14	220.66	310.65
315.99	182.45	116.70	63.69	387.90	251.64	600.76	1134.53	276.13	381.33
436.80	446.66	248.19	370.23	327.50	363.75	422.01	218.61	106.84	248.19
333.25	362.43	385.03	367.36	108.89	176.35	733.89	105.19	219.43	1634.62
340.24	268.74	80.54	80.54	78.07	74.47	192.72	311.88	332.84	598.29
296.27	875.66	285.17	89.99	278.19	39.28	252.30	384.62	521.86	657.05
852.24	127.38	193.95	312.71	325.44	41.33	54.65	258.05	191.49	310.65
755.67	331.61	291.75	342.70	414.20	351.06	81.36	606.10	197.65	396.12
696.91	212.85	456.94	537.06	213.68	384.61	471.32	758.55	395.30	117.52
67.39	282.71	1254.11	359.14	371.47	380.52	235.87	340.65	281.89	357.91
719.10	214.91	578.98	143.00	430.23	1203.35	238.74	594.18	308.19	274.08
257.23	1067.14	485.29	367.77	435.98	203.76	239.56	192.31	166.83	585.14
671.43	285.17	297.50	158.61	306.13	441.90	225.18	417.49	723.62	567.47
562.13	277.37	341.06	225.59	87.94	163.67	155.74	256.41	729.37	280.65
594.18	57.53	212.44	236.28	299.97	229.54	101.09	246.96	476.25	128.62
447.07	2061.56	1243.84	244.49	1323.55	36.42	346.40	1053.58	217.78	267.51
539.94	414.20	202.99	458.17	508.30	781.91	169.71	110.54	510.36	267.09
422.01	45.61	215.32	120.40	147.11	329.38	144.23	296.27	213.68	341.47
137.25	94.10	282.30	112.18	104.37	481.18	96.15	272.03	457.76	118.75
540.35	337.77	696.91	108.07	184.09	202.13	278.60	596.24	296.27	304.90
150.39	698.14	218.20	161.90	113.41	278.64	1065.09	406.39	352.56	149.57
142.18	72.73	313.12	366.12	359.14	446.81	161.90	97.80	241.62	325.03
739.65	206.28	286.82	687.46	112.18	236.09	399.41	667.32	530.49	133.14
560.08	216.96	369.00	413.79	285.59	153.44	199.70	411.33	463.92	191.49
659.93	446.25	89.99	235.87	466.39	436.17	260.93	1.64	273.67	375.58
178.34	161.90	320.51	169.30	293.80	518.82	238.74	116.29	162.31	271.61
937.30	166.42	152.45	701.02	350.92	155.89	99.85	201.35	211.62	142.18
154.50	83.42	426.12	201.35	72.73	166.94	175.46	93.69	140.12	201.35
421.60	445.84	126.56	352.56	168.48	281.10	134.78	197.65	274.08	354.21
375.99	113.41	279.42	385.03	274.49	305.65	75.20	425.71	199.70	354.62
132.73	50.54	131.49	500.08	591.31	182.49	115.06	392.42	411.74	537.06

**TABLE A-11 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 5 MALE RAW DATA: AP 0 MG/KG/DAY.**

828.81	319.28	279.83	318.87	277.78	222.18	76.84	292.98	530.90	154.50
369.41	506.25	362.43	205.46	608.15	314.65	487.76	413.79	185.73	689.92
341.06	239.15	212.85	94.10	617.19	158.35	121.22	471.32	112.59	832.51
634.04	115.06	412.15	643.49	239.56	103.93	75.20	462.69	87.94	461.46
196.42	150.81	305.72	212.85	365.30	202.95	319.69	659.52	173.41	309.01
322.57	110.13	170.12	180.39	84.24	103.11	71.50	585.14	341.88	469.26
109.30	431.05	268.33	210.39	434.75	132.57	188.20	3.29	662.80	465.16
212.44	213.68	262.57	366.95	188.20	124.39	451.18	81.36	411.33	258.05
281.48	179.16	204.64	153.27	92.87	180.03	117.52	103.96	226.00	413.79
452.01	127.79	141.77	136.42	182.04	354.75	145.87	544.05	214.91	161.49
336.54	187.79	304.49	139.30	204.22	135.84	379.27	55.47	923.32	175.87
279.01	396.12	184.91	238.74	446.66	174.71	178.34	672.26	93.28	162.72
354.21	141.35	379.27	123.69	234.63	171.03	626.64	347.63	735.54	426.12
191.90	59.58	269.97	867.85	91.63	92.06	406.39	282.30	182.04	278.19
219.02	441.32	203.40	39.45	183.27	109.25	318.05	292.16	144.64	506.66
67.39	755.67	156.97	196.42	286.82	259.82	93.28	508.30	433.10	302.84
512.82	48.08	248.19	172.17	29.18	228.31	338.59	264.22	671.84	266.68
229.29	237.92	491.04	129.03	123.69	186.58	256.41	541.58	120.40	328.32
375.16	469.26	92.46	295.86	216.55	170.62	298.73	620.89	193.13	465.16
105.61	694.86	421.60	302.84	401.05	150.57	115.06	213.26	836.62	405.98
315.58	217.78	138.48	80.13	57.53	82.65	276.96	150.81	371.47	418.31
27.12	206.28	414.61	141.35	649.66	359.25	231.35	874.43	222.30	167.24
420.78	2131.82	1378.21	126.97	166.83	188.62	264.63	615.96	220.25	514.46
327.91	193.95	230.11	456.11	181.62	593.70	205.05	441.73	282.71	304.90
308.19	156.97	333.25	68.21	288.05	874.79	318.87	401.87	254.77	156.56
359.55	205.87	298.73	124.51	313.53	271.28	63.28	540.35	359.55	550.21
325.03	189.02	198.88	78.90	138.07	436.58	126.15	634.45	354.62	366.12
158.20	629.52	545.69	257.23	281.48	741.40	389.96	395.71	859.22	717.87
293.39	380.51	311.47	666.91	203.40	223.81	351.74	311.47	440.50	207.10
75.20	244.91	340.65	294.63	202.58	92.47	118.75	250.66	568.29	349.28
566.24	270.79	230.52	388.31	343.94	326.92	125.33	132.31	322.57	931.95
291.34	239.56	155.74	128.62	194.36	477.90	113.82	646.37	726.50	136.83
179.57	284.35	548.98	299.56	229.70	244.27	44.38	198.88	323.39	367.36
281.07	351.33	56.30	414.20	255.18	204.99	202.99	615.14	443.38	320.10

**TABLE A-11 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 5 MALE RAW DATA: AP 0 MG/KG/DAY.**

272.44	475.02	227.65	111.77	177.52	457.85	270.79	410.91	163.54	345.99
264.63	414.20	349.28	197.65	656.23	159.17	47.26	490.22	265.04	431.46
291.75	161.08	91.22	401.46	85.06	789.28	42.74	404.75	278.19	513.23
498.85	202.58	324.62	379.27	121.22	168.17	83.83	580.21	759.37	387.90
295.45	372.29	92.87	138.07	463.92	449.67	33.70	106.84	349.28	168.89
97.80	431.05	262.99	160.67	273.26	361.29	428.58	323.39	205.87	206.28
562.95	251.89	409.68	207.92	68.21	131.34	156.56	382.97	309.83	152.45
643.90	97.80	148.75	236.28	239.56	1060.96	154.92	373.11	241.62	505.42
500.49	289.28	348.87	512.82	488.99	517.18	55.47	493.51	78.90	548.98
358.32	157.38	251.89	524.74	251.07	922.25	353.80	587.20	576.10	311.06
167.65	526.79	445.02	1171.52	151.63	312.60	122.04	482.82	518.57	198.06
343.52	219.84	258.88	188.20	227.65	258.18	63.69	269.97	165.60	341.47
368.18	317.64	288.05	106.43	139.71	1083.87	381.33	684.99	34.52	233.40
1010.44	242.85	234.22	238.33	114.65	227.09	210.39	486.93	234.22	194.77
	698.14	127.38	142.18	122.04	66.28	315.58	516.52	125.33	433.51
	375.99	330.38	327.50	165.19	102.70	95.74	342.29	341.06	179.98
	202.17	374.34	48.90	241.62	731.18	80.13	51.78	238.74	394.07
	380.92	463.51	265.45	409.68	561.37	105.19	225.18	313.53	231.76
	505.01	475.02	399.41	291.75	250.82	349.69	423.24	59.99	219.84
	104.37	119.17	51.36	189.02	156.71	101.50	642.67	235.45	476.25
	175.46	166.42	173.41	186.14	234.45	159.44	207.10	138.07	62.87
	1163.30	300.38	20.96	587.20	829.37	190.25	114.65	147.93	136.83
		191.49	137.25	474.20		166.83	744.17	1106.59	407.63
		349.28	212.03	442.97			194.77	401.87	224.77
		579.80	204.64	280.24			981.67	733.89	235.04
		259.70	394.48	277.37			69.03	277.37	368.59
		1309.58	182.45	108.07			345.17	92.46	311.06
			79.31	516.93			785.26	153.27	108.48
			135.60	356.67			415.85	652.12	539.12
			532.13	269.15			310.65	322.16	704.31
			137.66	27.53			558.84	715.40	135.60
			376.40	209.57			600.35	110.13	197.24
			152.86	265.04			636.92	714.17	219.43
			699.79	58.76				195.18	148.34

**TABLE A-11 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 5 MALE RAW DATA: AP 0 MG/KG/DAY.**

444.20	163.96	377.63	43.15
185.32	205.05	551.86	354.21
89.58	305.72	175.87	
86.29	78.07		
205.46	52.60		
301.20	757.31		
225.18	343.11		
505.84	286.82		
343.52	315.58		
223.95	332.43		
98.62	398.18		
221.89	186.14		
657.05	9.04		
231.35	578.98		
304.90	202.99		
184.09	156.15		
85.88	92.46		
72.73	206.28		
36.57	201.76		
176.28	32.05		
223.95	417.49		
110.95	559.25		
178.75	243.26		
355.03	18.90		
541.17	65.34		
247.78	45.20		
80.95	206.69		
33.70	160.26		
	31.64		
	129.44		
	218.61		
	323.39		
	2.88		
	93.28		

**TABLE A-11 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
5-DAY OLD RAT PUPS. GROUP 5 MALE RAW DATA: AP 0 MG/KG/DAY.**

				361.19					
				14.38					
				134.78					
				210.39					
361.14	375.25	307.62	261.20	257.78	291.14	249.21	389.38	336.60	320.74
210.45	331.92	220.42	179.07	174.17	232.78	183.52	220.96	220.58	199.22
			Group Mean		315.00				
			Group StDev		50.45				

**TABLE A-12. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 1 FEMALE RAW DATA: AP 10.0 MG/KG/DAY.**

202B1	203B1	204B1	205B1	206B1	207B	552	553	554	555
336.54	457.35	463.92	621.71	419.13	1567.23	349.22	1207.08	680.54	2927.78
545.28	1317.39	1404.92	5065.75	860.04	5381.33	1795.21	559.42	119.04	1213.74
3021.86	698.14	632.81	219.84	1337.11	947.16	706.76	1537.98	141.10	935.28
562.54	656.64	258.47	1851.17	773.75	678.01	3784.39	328.82	2126.95	2943.60
1911.16	1688.86	1181.38	2512.74	775.39	1173.98	276.80	509.05	1331.53	285.12
1111.11	257.64	389.55	99.03	1328.90	2671.35	330.49	263.89	2685.12	2422.89
3253.21	2121.55	1659.68	341.88	1893.08	1269.72	273.88	375.44	219.36	4832.88
1941.98	1779.26	349.28	1307.94	3406.48	5324.21	2459.94	1097.19	4313.84	2441.21
225.18	1268.49	242.03	785.26	2992.28	3306.21	811.24	1177.52	3132.99	1043.50
426.94	2139.22	658.28	2581.77	3603.30	1668.72	558.17	979.40	1424.35	1718.21
590.48	5336.54	45.61	597.88	5635.27	8394.97	1147.56	495.32	304.27	2390.43
1338.35	257.64	209.16	198.06	79.31	1148.50	96.15	518.63	3492.20	1224.56
1192.06	712.11	384.62	1727.48	261.75	1615.30	3388.14	1200.83	4574.82	2560.67
336.54	3589.74	1192.47	540.76	1778.02	703.07	1129.66	576.90	4876.17	477.42
556.79	897.03	402.70	3654.26	2472.06	557.20	675.13	1152.13	3191.26	1816.86
2429.32	622.12	811.97	1683.93	1291.50	950.44	1206.24	763.37	1204.58	456.61
428.99	451.18	1656.39	14333.09	1214.66	4419.38	805.00	547.76	724.25	185.64
3353.47	974.69	375.58	654.18	3851.91	2910.91	2334.24	537.77	669.30	2405.41
1452.99	1238.08	53.01	814.02	1323.96	1036.33	2916.13	303.85	331.32	1575.03
420.78	2278.11	343.11	1752.55	850.18	2179.08	4890.74	574.40	554.01	701.77
562.54	421.19	175.05	129.85	897.85	2035.26	2450.78	536.52	890.32	1868.47
826.35	2029.92	140.94	91.22	2122.37	1021.12	3669.10	1490.12	1214.57	1984.18
852.24	1792.00	110.54	755.26	1498.60	575.69	5464.31	704.68	350.88	1875.55
1593.11	606.10	69.03	2103.88	2268.66	2276.87	805.83	940.27	1436.84	604.37
57.53	1005.51	512.82	1388.48	5373.93	3971.48	732.57	592.72	370.03	1918.00
820.60	2481.10	586.79	947.16	450.77	673.49	328.41	2255.15	1336.94	694.69
201.76	1761.18	2142.51	875.25	2195.92	3954.64	843.29	1431.43	1210.41	2097.40
665.68	234.63	788.13	2036.49	1860.21	81.36	292.20	430.39	2279.71	1279.08
210.80	2578.49	168.06	915.93	348.87	594.59	2251.82	469.10	944.85	968.99
624.59	994.00	798.41	393.66	588.43	3433.60	2103.64	202.71	4955.26	1503.85
4097.63	594.59	192.31	93.28	2345.91	3196.09	744.23	671.38	3384.81	737.57
940.17	1079.06	2696.42	181.62	639.38	4799.89	7027.26	1168.78	1729.45	1515.09



**TABLE A-12 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 1 FEMALE RAW DATA: AP 10.0 MG/KG/DAY.**

1427.52	1958.83	242.03	1452.17	1537.64	205.87	1461.39	5602.50	2447.45	1326.54
782.38	3399.08	714.17	464.74	2230.85	3468.94	4511.55	2688.45	3971.28	1557.54
695.27	209.57	2205.38	2700.53	281.07	1971.98	437.05	259.31	2156.09	524.87
3442.64	522.27	183.27	355.85	2488.49	5631.16	587.72	3258.27	1530.07	1504.27
2160.59	133.14	46.43	601.58	2159.76	2634.37	1919.67	1405.20	2051.61	721.75
310.24	5927.43	1560.24	3712.20	107.25	1025.64	46.20	2066.60	1603.75	1147.97
84.24	1738.99	115.47	612.67	928.67	1794.05	565.66	392.09	1522.58	1281.17
1659.68	9592.37	648.83	2939.27	780.33	1215.07	276.38	7776.90	914.46	4518.21
738.82	1815.42	675.95	590.07	156.56	141.77	875.34	783.77	380.44	3909.26
767.18	1274.24	175.05	1228.22	2091.14	6104.13	2867.43	225.18	1024.77	1322.79
1661.33	3721.65	1124.67	461.87	1028.93	4446.09	548.60	7704.48	1545.47	454.94
322.16	219.84	509.94	89.58	243.26		549.84	1535.48	1557.54	1774.82
1106.18	3121.71	341.47	4250.90	455.29		1575.03	1447.66		348.39
701.84	4319.53	1711.05	864.56	1842.95		202.71	544.85		1276.17
311.06		56.30	1437.79	1958.42		425.81	980.23		2655.98
851.82		208.33	586.79	3145.55		265.97	1433.92		3366.49
161.08		148.34	71.09	3490.71		523.21	1504.27		3488.45
1242.19		794.30	2472.47	2230.85		632.67	2436.21		237.25
1161.65		26.30	1650.23			952.34	1585.43		4273.88
68.62		24.24	2022.52			1250.36	885.74		173.15
207.51		495.97	2719.84			137.36	2255.15		3966.29
1313.28		2042.24	1042.49			323.83	12733.82		
3422.91		432.69	1553.25			928.62	654.32		
1602.15		1423.82	1268.08			913.63	1685.74		
1005.51		113.82					2349.64		
522.27		1676.53					1632.05		
1107.00		666.09					1537.98		
1108.65		284.35					651.82		
708.42		70.27					3217.48		
403.52		1950.61					1010.20		
166.42		363.25					1048.91		
2358.24		443.79					2769.62		
		562.95					782.52		
		2117.44							

**TABLE A-12 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 1 FEMALE RAW DATA: AP 10.0 MG/KG/DAY.**

			240.39						
			161.90						
			1821.17						
1101.11	1788.56	688.04	1542.93	1677.93	2398.98	1418.34	1576.09	1747.88	1725.21
950.26	1788.63	671.07	2073.84	1276.15	1907.43	1492.99	2028.51	1344.53	1179.92
								Mean	1566.51
								St Dev	450.15

**TABLE A-13. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 2 FEMALE RAW DATA: AP 3.0 MG/KG/DAY.**

196B1	197B1	198B1	199B1	200B1	201B1	548	549	550	551
2421.93	1434.09	1848.29	201.35	142.18	279.42	5952.13	3037.25	1276.71	254.32
1729.54	1242.19	1262.33	1910.75	177.52	1976.91	4211.86	3419.36	930.31	552.76
981.67	804.98	514.05	813.20	1333.83	1740.22	3859.73	1376.90	255.18	666.81
643.90	2414.53	940.99	1638.72	184.09	102.73	2324.25	1891.36	115.06	604.37
685.82	501.32	4395.96	1075.36	605.28	3386.34	716.34	9592.09	428.99	2174.40
393.66	1752.96	1769.40	638.15	91.63	708.83	1600.00	6768.78	2711.21	675.55
1379.85	2232.50	765.94	845.66	510.36	858.40	6329.66	1950.05	848.13	304.27
60.82	1487.51	396.53	2491.78	315.17	570.76	1662.02	7942.56	445.43	551.09
209.16	1411.90	3062.13	4867.69	82.59	1020.30	1044.75	1467.64	45.61	158.59
443.38	641.44	50.95	462.69	1509.70	451.59	212.28	645.58	324.62	348.39
1762.82	46.84	546.11	509.53	49.72	1172.75	4671.80	693.03	27.53	879.08
394.48	599.52	1054.41	629.52	1523.26	203.40	1677.84	2606.87	620.48	464.10
440.09	2179.08	826.76	3540.43	881.41	307.36	873.26	3406.04	49.72	1065.14
249.84	1270.55	823.47	3418.80	622.54	412.97	828.30	547.35	82.59	238.50
776.22	2634.78	796.76	897.03	115.88	745.81	646.41	2243.91	929.90	466.18
1185.49	1719.26	1385.60	3474.28	81.36	1191.65	2259.31	312.18	1968.69	551.51
82.59	3437.29	2099.77	805.39	487.34	2132.64	387.51	903.23	653.35	401.25
631.16	1750.49	164.78	2894.89	1179.32	569.94	3315.30	1792.30	780.74	697.61
431.87	452.01	1317.39	210.39	201.35	117.93	2718.00	619.77	5228.88	712.59
49.31	85.47	297.91	442.97	275.31	3705.62	1541.73	2773.78	1269.31	489.07
969.35	226.41	885.93	857.58	427.76	597.47	3271.18	2008.33	1093.44	443.29
2353.30	183.27	378.86	4865.63	1214.25	699.38	76.59	1504.68	520.22	332.15
717.87	755.67	1946.91	2193.46	4857.00	539.94	1545.89	86.99	1161.24	148.18
700.20	1649.82	465.16	3079.39	1281.64	925.79	668.47	549.01	1454.22	710.09
558.84	1169.46	2850.92	890.86	78.07	42.32	4661.81	1981.69	225.18	850.78
440.91	1400.81	2005.67	2456.03	265.04	3852.73	1249.12	905.31	162.31	951.93
310.65	2066.49	433.93	4008.88	437.62	163.96	4511.13	411.24	301.61	785.02
98.21	79.31	54.24	901.96	3269.64	112.18	936.52	429.14	846.48	367.53
343.52	156.97	1313.69	1789.94	2231.67	195.60	743.81	1524.66	714.58	398.75
676.36	861.28	729.37	3971.89	595.00	660.34	9336.94	544.02	215.73	74.09
155.74	84.65	957.43	6017.83	350.10	295.86	705.93	2615.61	1020.30	740.48
1773.09	500.08	566.24	2386.59	2148.67	1158.78	3184.60	1648.70	441.73	398.34

**TABLE A-13 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 2 FEMALE RAW DATA: AP 3.0 MG/KG/DAY.**

718.28	126.56	598.70	837.85	354.62	751.97	2960.25	2488.66	30.41	969.82
3281.15	1358.89	660.34	3153.35	1209.73	736.36	2273.47	1261.60	484.47	2076.17
460.63	1345.74	664.04	1976.50	897.03	3141.03	954.42	1542.56	439.27	529.45
1380.26	1171.93	1636.26	1218.36	74.38	2558.76	1304.47	1768.16	166.42	275.13
320.92	2765.45	1851.99	868.26	92.87	870.73	2361.29	494.07	2208.25	1919.67
64.51	451.59	480.77	3487.84	596.24	1039.20	4993.13	1983.35	449.54	1953.38
556.38	259.70	255.18	1300.54	205.05	628.29	371.28	3001.46	776.22	126.54
1945.68	1947.32	626.64	665.27	387.08	1436.56	743.39	1675.34	227.24	64.10
223.13	136.42	514.46	303.25	1390.12	3183.76		1211.24	842.78	1226.22
2944.61	313.53	1598.04	1473.54	1849.93	97.80		2485.74	226.00	279.29
274.49	475.02	90.40	2126.48	1393.82	191.90		2075.75	137.66	482.83
807.04	1037.56	2599.03	2030.33	1513.81	562.95		1107.18	1391.77	608.95
1806.38	576.51	1091.39	2153.19	1111.52	1549.97		3709.89	241.62	516.55
637.74	436.80	3150.07	4009.29	1386.01	2646.70		953.59	446.66	2273.05
172.17	1303.01	821.83	2330.29	261.75				487.76	556.09
127.79	1619.00	376.81	1370.40	998.52				337.77	139.85
1209.32	836.21	801.69	1669.54	820.18				396.12	2440.79
829.22	2727.65	4092.70	3159.93	210.80				33.28	247.24
1995.81	388.31	3763.97	1909.93	757.31				82.18	540.27
1227.40	3324.70			2309.75				1443.13	300.52
363.25	420.78			936.88				191.49	505.31
923.32	769.64			522.27				562.54	1371.07
697.73	2488.91			212.85				612.67	138.19
830.05	631.58			1430.39				329.14	587.72
1227.81	916.75							704.31	789.18
	301.20							50.13	385.85
	856.76							648.01	228.10
	172.58							173.00	1162.12
	151.63							191.08	218.94
	1192.88							1438.20	293.86
	177.93							613.49	170.66
	364.07							53.83	1002.71
	69.44							933.19	114.46
	333.66							2226.33	711.34

**TABLE A-13 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 2 FEMALE RAW DATA: AP 3.0 MG/KG/DAY.**

								244.49	
								290.52	
860.99	1040.65	1227.10	1984.96	865.16	1093.39	2342.15	2042.56	695.01	661.54
741.46	862.89	1052.68	1380.26	881.91	1044.51	2011.32	1880.88	801.34	555.30
								Mean	1281.35
								St Dev	612.27

**TABLE A-14. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 3 FEMALE RAW DATA: AP 1.0 MG/KG/DAY.**

190B1	191B1	192B1	193B1	194B1	195B1	544	545	546	547
1302.19	814.84	1333.83	2333.17	786.08	1642.42	1818.52	57.44	275.13	162.75
1043.31	3039.53	1424.64	1226.99	310.65	4887.82	3786.06	288.03	675.13	236.00
2427.68	5985.78	2637.66	143.41	108.07	4081.20	2673.47	357.96	146.93	692.61
1444.77	6091.80	1590.24	430.64	2979.95	2689.84	8668.47	1093.86	209.37	83.66
289.69	1255.34	2841.06	1034.68	501.73	4408.28	8439.13	695.94	1285.74	1918.00
5322.16	744.58	3112.67	3560.98	1313.28	3408.94	247.24	197.29	879.50	655.15
214.50	419.54	1134.12	741.29	3119.25	2439.19	3597.50	228.51	1472.63	1060.98
911.41	1459.98	880.59	864.97	1874.18	4199.95	355.46	241.83	2420.40	1371.90
1397.52	2882.97	2932.28	1127.14	356.67	1760.36	4245.99	1174.61	2055.78	1571.70
2057.86	2345.09	1103.72	1498.19	1975.67	927.84	1767.74	214.36	43.29	426.22
2003.62	281.07	1106.59	376.40	767.18	3392.51	1242.87	158.17	1103.02	870.34
1552.84	1327.25	2158.53	501.73	1161.24	13174.72	777.11	783.77	159.83	584.81
715.81	48.49	2396.86	1429.57	1478.88	1107.00	1064.72	184.39	449.95	315.09
1341.63	1788.30	1499.43	1411.90	263.40	1189.19	2086.99	580.23	919.46	1343.60
2586.29	4183.10	1161.65	69.44	3833.83	5412.56	5400.63	949.01	376.28	1494.28
433.51	154.50	1730.36	2762.57	1457.92	7541.91	228.51	757.96	1914.26	1114.26
1059.34	1261.51	2315.91	72.32	1080.29	11199.05	166.91	926.12	1458.90	1153.80
2988.99	1649.00	989.07	844.84	219.84	3728.22	340.48	1206.66	335.07	940.27
1498.60	3142.26	712.53	1226.99	1815.01	903.60	166.08	1530.91	473.67	205.20
990.30	957.02	1251.23	588.43	118.34	3046.10	82.00	983.14	420.40	101.15
855.52	2508.22	3224.03	9065.99	262.16	3806.71	5273.26	972.74	479.50	1759.42
5038.22	313.94	507.89	2321.66	122.45	238.33	378.77	141.10	1604.58	415.40
3350.59	3852.73	2269.07	419.95	1769.40	168.06	57.02	1272.84	454.53	971.07
491.45	1698.31	1121.38	324.21	652.12	468.44	142.77	344.23	366.70	195.63
2105.11	205.05	897.03	2282.63	1235.62	3185.82	143.60	737.57	640.17	4677.21
461.87	4566.08	1194.53	291.75	84.24	161.08	2207.70	198.96	889.91	9478.46
2159.76	6204.39	1333.83	1245.89	1554.90	624.18	108.64	157.34	1002.71	1670.34
2083.33	1174.39	5048.49	244.91	1797.34	1035.09	910.30	824.56	2372.53	1137.15
68.62	1966.22	5812.79	317.64	1215.07	526.38	182.31	547.76	772.11	1010.61
399.00	107.25	2948.31	1413.54	505.01	3867.52	178.56	362.12	119.46	9483.04
1433.27	2925.30	756.49	1363.41	649.66	1120.15	368.37	3120.08	4802.91	114.88

**TABLE A-14 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 3 FEMALE RAW DATA: AP 1.0 MG/KG/DAY.**

426.94	2127.71	5698.96	2428.91	6365.88	4149.41	275.13	280.54	919.04	3503.85
2585.47	1026.46	2698.88	179.98	530.49	3998.19	2102.81	1724.04	1039.33	1478.46
1855.69	1010.85	3043.64	1117.69	246.55	7214.00	2446.62	431.22	311.34	1710.72
251.48	2566.16	1123.44	385.44	87.11		2274.71	374.19	1635.80	1693.65
405.98	6434.91	6140.29	1372.45	1190.42		695.53	1354.84	234.76	5904.68
1162.89	3758.22	2943.38	5378.04	1736.11		1801.04	1207.91	658.48	660.98
233.40	10158.20	9420.20	257.23	1221.24		1379.81	1139.65	2816.23	236.00
649.66	7589.99	768.82	1195.76	446.66		1531.32	450.78	1366.08	1175.86
1978.55	1464.50	3725.35	398.18	338.18			1389.39	665.97	1684.08
550.21	1995.40	2738.33	2271.53	796.76			592.72	411.66	690.95
957.43	879.36	8715.48	1699.54	81.36			690.95	3010.20	497.82
10639.79	428.99	1572.98		184.50			979.81	841.21	258.90
2342.62	3447.98			1571.75			5222.06	260.98	1076.38
3134.86				98.21			1180.44	523.62	386.26
3203.49				83.42			939.02	83.25	406.66
2104.29				721.98			578.98	104.48	741.31
3924.64				1628.86			2626.43	213.53	250.99
2659.02				3902.45			1683.66	115.30	232.26
				837.44			217.27	103.64	
				879.77			190.64	3218.73	
				2292.08			113.22	56.61	
				793.89			820.40	1473.05	
							275.13	2138.19	
							201.04	1454.32	
							1104.27	3963.37	
							588.14	647.24	
							1230.39	636.00	
							267.22	1839.33	
							106.97	895.32	
							68.68	4106.56	
							82.00	349.22	
							343.81	565.25	
							2381.27	1865.14	
							790.84	41.62	

**TABLE A-14 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 3 FEMALE RAW DATA: AP 1.0 MG/KG/DAY.**

							243.50	545.68	
							73.67	133.20	
							96.98	959.83	
							445.79	788.76	
							781.27		
							194.38		
							624.77		
							359.21		
							139.02		
							593.97		
1818.27	2460.06	2512.01	1386.24	1158.58	3285.41	1784.98	752.93	1037.28	1424.59
1766.44	2253.05	2033.27	1609.55	1178.87	2982.61	2150.59	797.06	1034.79	2007.37
								Mean	1762.03
								St Dev	784.35



**TABLE A-15. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 4 FEMALE RAW DATA: AP 0.1 MG/KG/DAY.**

184B1	185B1	186B1	187B1	188B1	189B1	540	541	542	543
885.93	1353.55	2926.53	2064.43	137.25	1729.95	1729.13	1077.63	429.55	2118.63
295.86	1228.63	2074.70	2478.22	332.84	1955.95	243.26	3062.23	3700.73	1259.94
103.96	622.54	3699.87	29.18	39.45	331.20	64.51	5608.33	801.25	657.23
989.48	85.88	10787.31	1187.95	88.35	459.40	1238.91	774.19	538.19	1234.13
78.49	129.44	4259.94	46.43	184.50	644.72	2794.63	5672.84	156.92	2520.29
341.88	6660.50	1368.75	8547.42	78.90	164.37	4718.11	3827.26	1632.05	1006.87
1107.82	833.74	7941.32	1713.92	318.05	151.22	512.00	1338.19	128.20	576.07
795.12	1094.68	288.87	2467.54	1304.24	50.54	198.47	7858.06	102.39	1334.03
738.00	434.34	1795.28	2947.90	59.17	672.67	260.52	1435.17	627.26	1224.97
278.60	30.00	460.22	1743.92	721.15	247.78	2490.96	3120.08	2786.26	914.05
368.18	375.16	422.42	507.07	477.07	1735.70	4309.25	4020.40	414.57	3667.43
640.62	673.49	24.66	389.96	2919.13	179.98	2101.82	1152.97	1332.78	156.50
4700.85	1977.73	21.78	4868.10	1835.55	700.61	178.34	481.58	342.56	479.92
765.12	419.95	415.02	1480.93	222.72	1107.00	7799.15	7105.52	544.02	1541.31
147.93	509.53	412.97	214.09	599.11	144.23	6230.28	89.07	4734.65	320.08
553.09	3151.30	2831.61	92.05	1113.58	71.91	615.55	8252.24	841.62	3755.67
29.59	382.15	71.09	740.88	273.67	170.53	2886.67	3469.72	2036.63	1877.21
329.55	136.01	53.42	708.83	919.21	74.38	6039.61	721.75	471.59	1492.61
2156.89	156.97	1689.27	385.03	2141.68	854.29	7570.68	1805.62	154.42	1780.23
173.41	1037.97	5655.41	971.40	100.67	40.68	149.57	3154.63	2911.55	269.30
677.19	396.12	1541.34	2680.39	366.95	81.77	4245.97	862.44	914.05	1291.99
1913.22	1814.60	1301.78	255.59	96.57	83.01	153.68	464.10	1432.67	1785.22
89.99	237.10	484.06	1754.19	2561.64	89.99	1117.69	617.27	1052.24	1701.56
827.58	972.22	100.67	261.34	361.60	131.49	3046.52	3100.52	3408.53	619.77
2143.33	2268.66	3553.17	1391.35	615.14	141.77	295.45	1584.18	1680.33	396.25
270.79	1053.58	348.04	1086.87	76.84	83.42	1372.45	2491.57	1611.66	1054.32
315.58	793.48	1481.34	4074.21	865.80	997.70	698.14	1346.93	303.85	475.75
122.04	982.91	2218.11	257.23	459.81	1477.24	4047.91	1894.28	3369.41	1059.73
622.54	1487.92	786.49	30.82	1059.34	345.58	405.98	3102.60	364.20	3207.49
152.04	2457.68	1396.70	278.19	173.00	3602.07	3183.76	735.07	944.85	798.75
1280.82	1190.01	5706.36	3010.36	97.39	1206.44	4835.22	420.40	905.31	473.67
248.60	120.40	105.19	5080.13	1102.07	587.20	4790.02	1563.37	625.18	444.95

**TABLE A-15 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 4 FEMALE RAW DATA: AP 0.1 MG/KG/DAY.**

4374.59	1251.23	1245.48	185.73	505.84	431.87	3571.66	5502.60	2939.44	503.64
38.63	1786.24	156.56	2293.31	100.26	2155.24	370.64	1174.61	7747.35	248.91
470.50	65.34	489.81	1000.16	103.55	2158.12	3075.28	1180.44	116.96	501.56
3320.60	332.02	885.11	1213.84	692.39	5992.77	1004.68	2164.41	1190.43	1510.09
917.16	726.50	4927.27	3116.78	717.05	4115.30	6345.33	3615.82	1252.45	51.61
294.21	253.12	3952.58	3843.28	29.59	148.34			3220.40	812.49
740.88	1424.64	69.44	1192.88	2219.76	1321.91			1505.52	340.06
1256.16	930.72		2370.97	64.51	54.24			1304.47	176.90
4009.70	2223.46		122.45	899.90	325.03			1921.75	964.83
397.35	513.64		4751.81	1194.53	120.81			2393.76	1414.78
178.34	1047.01		3588.92	57.94	137.66			708.43	660.56
198.47	334.07		371.88	824.29	483.65			511.55	352.55
336.95	696.09		4134.21	395.30	1927.19			2458.27	1619.98
1095.50	364.07		831.28	206.28	230.93			1300.31	1399.79
1620.64	680.06		2806.95	1429.16	1526.55			3830.18	775.44
943.05	3208.42		1169.87	255.59	1371.22			590.64	4160.25
536.65	188.20		2350.02	518.57	194.77			252.65	937.77
727.32	156.15		6195.35	98.21	1137.41			1945.47	1102.60
258.05	5289.28		594.59	5432.69	521.45			2319.67	1267.85
1035.50	673.90		2735.87	204.64	43.15			1595.42	862.02
69.86	141.77		6374.10		1112.34			4946.51	479.08
361.60	845.66		4010.52		852.24			5694.90	310.09
1208.09	472.96		3144.72		411.74				1260.35
364.07	291.75		5096.98		446.66				1672.84
262.16	2257.15		2457.27		113.41				1976.69
171.35	860.87		4222.96		598.29				1153.38
1851.99	144.64		1205.21		162.31				70.34
3415.52	259.70		329.55		908.94				641.83
	909.76		519.40						963.16
	379.27		4478.14						614.36
	758.55								325.49
	1734.06								59.11
	128.21								
	650.07								

**TABLE A-15 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 4 FEMALE RAW DATA: AP 0.1 MG/KG/DAY.**

374.75

851.00

909.98	1004.01	1998.72	2104.11	724.09	821.97	2559.24	2590.49	1686.04	1104.47
1075.87	1141.11	2400.31	1885.18	953.29	1080.63	2307.94	2155.26	1583.31	882.16

Mean 1550.31

St Dev 726.21

**TABLE A-16. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 5 FEMALE RAW DATA: AP 0 MG/KG/DAY.**

178B1	179B1	180B1	181B1	182B1	183B1	536	537	538	539
1366.29	529.67	322.16	186.14	216.96	1015.78	288.45	1528.41	3667.43	847.87
2902.70	1785.83	511.59	2099.77	880.18	240.80	584.39	1643.70	792.51	1018.52
973.04	1311.64	4739.07	2098.95	566.65	991.54	178.98	186.89	700.94	421.64
7482.74	286.82	582.27	1396.70	1615.30	184.50	865.77	480.75	1760.25	835.38
4585.39	1732.82	2425.21	106.84	254.77	549.80	151.93	803.33	467.43	593.55
3547.83	1098.37	890.86	874.01	469.68	304.49	140.69	5654.94	1031.01	1589.18
4819.20	913.46	478.72	198.88	53.42	3106.10	1287.41	342.14	250.57	1773.57
5715.81	145.87	969.76	2267.83	101.09	427.76	173.15	1584.18	2042.04	770.45
1886.10	1246.30	494.33	2064.02	635.68	442.55	1580.85	139.44	2029.14	1815.19
1259.45	166.42	139.30	1842.54	84.24	263.40	357.13	16026.64	277.63	429.14
738.41	56.71	1484.63	408.45	449.95	199.70	593.55	5547.97	944.02	1286.58
2152.78	2026.63	844.43	1309.17	69.44	907.71	785.43	1680.33	386.26	2527.78
1143.98	1110.70	277.78	792.24	747.86	1118.92	1170.03	154.84	554.01	2134.44
1933.76	421.19	350.10	182.86	144.23	267.92	657.23	774.61	655.98	430.39
654.59	442.14	139.71	885.93	1203.98	226.41	123.21	334.24	1361.92	1319.04
596.24	240.80	3484.96	2887.49	164.78	1090.98	569.82	926.95	631.43	916.55
2912.56	360.78	1132.89	1125.49	1067.14	389.14	502.81	186.47	53.69	974.40
659.11	1962.53	629.52	2589.58	116.29	2221.81	316.34	389.59	375.03	894.90
734.71	34.93	1771.45	928.25	438.45	751.15	637.67	308.01	1021.44	393.34
264.22	1152.20	1048.24	1210.14	81.77	500.90	235.59	541.94	3896.36	590.22
129.44	1942.39	1373.69	748.27	244.91	899.08	1264.52	737.98	199.38	1257.44
1563.12	2628.62	627.06	2598.21	128.62	191.08	3550.05	2096.98	633.09	760.87
3664.53	458.17	2702.17	348.87	883.88	1337.11	422.06	839.13	2647.24	1047.24
751.97	1090.16	1754.60	128.62	691.16	461.87	1832.67	1254.11	2800.00	779.19
498.03	133.96	785.26	905.65	596.24	932.77	1546.72	579.81	3143.39	616.44
2970.91	1934.17	3653.44	1845.41	299.56	165.60	2161.08	4183.56	207.70	929.87
2002.79	1487.10	268.33	741.70	265.86	1966.63	2936.52	636.42	486.16	2098.23
1067.55	1845.41	1028.93	143.00	1169.46	616.78	284.29	3847.24	1388.14	2016.65
5133.14	3483.73	110.95	791.83	485.29	599.52	270.97	5333.20	147.76	1449.74
64.10	986.60	151.22	806.21	1254.93	911.00	3132.15	1834.34	1445.58	2288.45
1840.89	817.72	2792.16	1496.14	2162.64	2009.37	3109.26	4939.44	981.48	149.01
1210.55	4060.65	2235.37	1394.64	886.75	2294.95	1421.85	1874.30	55.36	1109.68

**TABLE A-16 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 5 FEMALE RAW DATA: AP 0 MG/KG/DAY.**

6386.83	995.64	1234.39	1756.66	1164.12	3031.72	603.54	683.04	2390.01	1792.30
1553.25	1118.10	572.81	50.95	378.04	889.22	151.93	2721.33	452.03	3388.14
1522.85	257.23	545.69	1951.84	1376.56	1267.26	832.47	7816.44	407.08	1416.03
5654.18	1402.45	1607.50	917.57	1343.28	1606.26	1793.55	8155.26	162.75	320.08
2561.64	274.08	103.14	305.31	1284.52	892.09	505.72	4818.73	1654.53	2734.65
5635.68	27.12	2081.69	2237.43	365.71	186.97	454.94		222.27	1420.60
485.70	396.12	1932.53	2069.36	193.95	2348.37	67.43		529.03	1935.07
996.88	1206.44	505.84	935.65	724.44	1109.88	1391.47		264.31	6100.73
315.17	1536.82	1214.66	2102.24	2747.78	1797.75	2297.61		1825.18	3353.17
2897.35	214.09	98.62	1376.56	2518.90	56.71	1617.90		1003.95	1041.00
5027.12	748.69	540.35	328.73	294.21	1259.04	699.27		1879.29	3030.59
1469.43	449.13	908.12	2645.46	3116.37	1338.76	2067.01		1012.70	2646.41
2060.73	136.83	1486.28	782.38	2730.52	689.51	65.77		1405.62	2119.88
1966.22	1045.78	1917.32	2116.62	2051.28	1409.44	165.25		1090.53	1353.59
952.91	354.62	559.67	3209.24	959.07	191.90	1283.66		471.59	525.29
269.56	3817.80	525.97	527.61	1155.49	568.71	241.00		1861.81	1359.83
372.70	304.90	294.63	1771.45	1213.84	1694.20	1684.91		228.10	1165.45
2038.96	477.07	1275.07	809.09	1316.16	1230.28	361.29		766.29	1496.77
	1916.91	525.56	4064.76	1683.10	1691.73	235.59		196.88	724.25
	132.73	1424.23	2270.30	798.82	839.91	1352.34		424.97	2246.83
	442.97		2058.27	2473.29	1108.65	514.88		452.86	886.16
	1598.46		1280.82	1229.45	1434.09	851.20		855.36	1162.96
	1160.01		295.04	80.54	694.03	1765.25			710.09
	1056.87		558.84	56.30	116.70	792.92			1636.63
	304.08		894.15	1626.40	1349.03	405.41			1982.10
	595.00			4840.15	2009.78	394.17			2044.95
	2671.35			75.20	2142.92	1801.46			1940.48
	2417.41			129.03	675.54	2721.33			1193.34
	4247.62			804.57	243.67	790.43			4868.26
	532.96			1423.00	2933.93				473.67
	1254.93			504.60	1679.82				873.26
	354.62			2877.63	892.09				
	3048.16			3907.79	653.35				
	1536.41			617.60	2313.03				

**TABLE A-16 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 5 FEMALE RAW DATA: AP 0 MG/KG/DAY.**

	1366.29					2798.73			
	744.99					2175.38			
	4742.36								
	1688.03								
	514.46								
	1556.13								
	1403.27								
	1898.42								
	709.65								
	231.35								
2187.86	1194.51	1145.27	1310.88	1007.47	1101.58	1000.69	2475.32	1047.99	1468.89
1869.91	1046.53	1000.10	904.01	992.32	795.00	873.33	3184.92	928.72	1062.59
								Mean	1394.05
								St Dev	518.86

**TABLE A-17. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 1 MALE RAW DATA: AP 10.0 MG/KG/DAY.**

172A1	173A1	174A1	175A1	176A1	177A1	532	533	534	535
822.24	1596.81	313.12	206.28	523.09	656.23	254.32	3326.95	1478.04	118.63
1081.53	2656.56	228.88	104.37	183.68	161.49	550.26	269.72	590.64	1863.48
1144.81	1190.42	140.53	954.55	43.15	2679.98	1885.95	924.87	103.23	139.02
779.50	690.34	436.39	3135.27	684.58	2539.45	974.40	909.47	254.74	1460.56
3334.16	1685.57	897.44	235.04	511.59	2726.41	1170.86	2025.81	164.00	962.75
1173.98	1641.60	169.71	126.97	334.07	2458.50	328.82	925.29	837.05	970.66
106.84	462.28	580.21	158.61	1371.22	4773.18	378.36	1392.72	467.01	994.80
106.84	260.93	2492.19	89.99	240.39	4008.47	1878.88	965.25	1878.04	1333.20
2163.46	654.18	1381.90	170.94	574.46	3916.01	2298.44	1576.69	447.45	519.04
3535.09	938.94	511.59	66.98	437.21	1049.47	536.11	4103.23	585.22	355.05
1681.05	1503.12	1215.89	716.22	894.56	4287.06	2271.38	415.40	69.93	1127.16
1139.46	948.39	345.58	153.68	892.09	3733.97	1795.21	427.89	201.04	183.56
1434.50	2889.96	39.45	181.21	173.00	5401.87	267.64	67.43	564.00	1510.93
312.30	1958.83	200.12	696.50	1437.38	1119.74	946.51	1040.17	873.26	2083.25
118.75	902.37	83.42	347.63	578.98	698.14	1995.42	527.37	137.77	1036.84
606.10	515.29	253.95	857.99	1884.04	4720.58	558.59	1639.96	586.47	1515.92
1815.83	130.67	408.04	85.06	599.52	1122.62	1091.36	632.67	435.80	156.09
814.84	530.49	43.15	174.64	426.53	3680.56	2684.29	922.79	141.94	97.82
376.40	499.26	470.09	957.43	344.35	1533.53	1310.30	1588.76	812.07	1274.92
472.14	1298.49	53.01	3480.85	1646.12	1445.60	1622.89	1419.36	441.62	121.96
436.39	1070.43	526.38	574.46	500.08	1500.66	2520.29	509.05	161.08	286.37
1168.23	1117.69	2533.28	3966.55	94.51	1323.14	3231.22	128.62	319.25	2676.38
215.73	133.96	833.33	244.49	1511.34	2564.51	1525.08	631.84	173.15	3268.26
3500.99	91.63	66.98	1664.20	216.96	4086.13	587.72	1533.82	83.66	1754.42
2050.87	168.06	196.42	262.57	480.36	1446.42	756.71	1510.51	1299.90	1039.75
869.49	354.21	339.00	1175.21	1208.91	1959.65	575.65	1643.70	105.72	2091.99
239.56	711.70	55.88	173.82	1403.27	3216.63	989.39	2416.65	954.84	244.75
76.02	298.32	116.29	544.87	654.18	436.39	3786.89	935.28	522.37	479.08
1471.48	224.36	36.57	2254.27	431.87	2093.20	2826.22	1111.34	172.74	95.32
707.18	2896.94	439.27	1847.88	1077.01	1013.73	768.78	1440.17	2085.33	116.13
112.59	317.23	95.74	1515.04	971.81	2313.03	1716.96	3327.37	776.28	158.59

**TABLE A-17 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 1 MALE RAW DATA: AP 10.0 MG/KG/DAY.**

307.78	405.98	617.19	139.71	982.50	865.80	732.15	922.37	3424.35	1763.16
181.21	1068.38	302.43	698.96	1107.82		727.16	815.40	175.23	278.88
916.34	127.79	76.43	1559.83	904.83		1654.94	3336.11	573.57	364.62
114.23	55.47	42.32	1565.17	3310.32		730.91	389.59	3668.26	542.35
552.68	113.00	530.49	1063.86	954.14		3002.71	1609.16	1712.38	705.93
264.22	1885.27	285.59	1052.76	3428.67		670.97	323.41	3483.87	1176.69
624.59	1078.24	588.43	1361.36	3137.33		3083.87	3314.05	5833.92	1033.09
2230.44	546.52	2148.67	458.99	860.87		325.49	1705.31	563.16	767.53
592.13	1696.25	79.31	1260.27	449.95		649.32	1037.67	978.56	241.83
1042.90	857.17	493.51	105.19	611.44		769.20	597.29	5853.49	1150.89
1119.33	82.59	491.45	4030.65	2017.18		208.12	2106.97	522.37	1252.03
497.62	126.56	262.16	250.66	375.99		1393.97	2107.80	1745.68	409.99
297.50	1059.75	2410.01	1303.01	1793.64		1559.63	1845.99	479.50	775.44
377.63	1100.43	1088.10	6220.83	3251.56		2692.61	1614.57	750.89	221.85
3559.34	90.81	487.34		2251.40		1378.15	1045.99	1232.05	219.77
1005.51	207.92	876.07		2564.10		2000.83		34.13	1905.10
48.49	918.80	599.93		2317.14		1323.21		803.75	1077.63
1162.89	923.32	2624.92		119.58		547.35		2735.48	2757.13
758.14	595.00	660.75		885.11		3661.19			183.14
1688.03	1237.26	139.71							2325.49
9434.99	1032.63	117.52							124.45
	125.33	1793.64							
	840.32	90.40							
	981.67	137.66							
	348.04	795.53							
		544.05							
		1656.39							
		2405.49							
		904.42							
		440.09							
		1477.24							



**TABLE A-17 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 1 MALE RAW DATA: AP 10.0 MG/KG/DAY.**

1166.24	854.35	655.98	1071.00	1073.08	2360.38	1423.93	1370.91	1067.23	948.34
1486.21	700.09	713.85	1294.75	898.51	1443.54	961.31	938.54	1341.22	798.26
								Mean	1199.14
								StDev	466.20

**TABLE A-18. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 2 MALE RAW DATA: AP 3.0 MG/KG/DAY.**

166A1	167A1	168A1	169A1	170A1	171A1	528	529	530	531
648.83	371.06	95.33	533.37	1163.30	41.09	2822.89	126.97	1024.35	4746.31
866.62	621.30	329.96	353.80	90.81	768.41	1485.95	242.03	659.31	1473.05
6038.79	295.04	888.81	111.36	263.81	1787.89	107.39	318.05	2354.21	1662.85
759.37	246.14	200.94	244.08	3323.06	202.99	658.90	53.42	928.20	2027.47
393.66	291.34	987.84	264.63	5995.23	3180.47	250.57	106.84	966.08	935.28
2647.11	857.99	1160.01	725.26	939.35	25.07	244.75	553.50	162.75	1108.01
598.29	48.49	1019.07	1809.25	277.78	658.70	1063.89	102.73	1451.82	2187.31
1337.94	836.62	27.94	74.38	226.41	228.06	369.62	419.54	321.75	627.26
2356.59	596.65	92.46	139.30	1683.10	54.65	434.96	992.77	1796.46	716.75
332.02	176.28	1234.80	133.14	48.08	171.76	130.70	183.68	244.33	1935.90
967.29	495.97	421.19	150.39	830.05	242.44	2197.29	622.54	234.76	1814.78
240.80	143.00	61.64	275.72	154.92	64.51	273.47	256.82	149.43	860.77
838.26	535.83	86.29	565.01	2230.03	349.28	1092.20	191.08	1701.15	1955.05
1233.97	687.05	176.28	389.14	271.61	66.57	910.30	294.63	439.13	4733.82
161.08	911.82	142.59	310.24	1605.85	783.61	371.70	322.16	81.17	1048.91
4058.19	37.80	166.42	78.49	1683.51	158.61	82.83	255.18	112.80	1716.96
2368.10	479.13	479.95	124.10	72.73	214.91	440.38	46.43	3080.54	4420.81
2493.01	56.71	331.61	76.84	463.51	223.54	217.27	148.75	340.06	922.37
616.37	108.07	3937.79	148.75	643.90	1228.22	122.79	95.33	367.53	925.70
219.43	608.15	195.18	110.54	379.68	1354.37	1157.96	598.29	798.34	961.50
212.85	464.74	313.94	994.82	191.90	724.44	726.74	184.50	168.99	1716.96
729.78	232.58	171.35	86.29	168.06	1102.48	2845.79	471.32	1403.95	2618.52
2460.96	378.86	1097.14	283.12	226.41	988.66	766.70	2420.28	910.30	837.05
768.82	225.18	505.42	1196.17	1032.22	4062.71	1367.33	49.31	49.95	1707.39
81.77	709.24	87.11	1118.10	69.03	3254.03	703.85	2554.65	260.15	2495.73
100.67	129.03	143.41	971.40	914.28	409.68	786.26	350.10	81.58	854.11
813.20	71.09	68.21	2548.49	2671.35	261.75	822.89	55.06	665.97	6377.52
1685.16	242.03	238.74	623.36	4296.93	1286.57	4270.55	49.72	105.72	104.48
927.84	49.31	641.85	1079.47	947.57	1318.21	62.44	156.15	1628.30	1365.66
1123.03	1164.53	548.57	128.62	671.02	296.27	1176.69	81.36	4414.98	2270.14
108.48	1688.86	145.05	3221.15	369.82	188.61	1409.37	333.25	814.15	1258.69
1300.95	2137.99	85.47	2629.85	176.69	247.78	1664.93	1535.59	537.36	2451.61

**TABLE A-18 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 2 MALE RAW DATA: AP 3.0 MG/KG/DAY.**

1057.28	213.68	1990.88	66.57	710.06	119.99	374.61	1803.09	871.18	1619.56
1078.24	502.96	661.98	59.17	366.12	583.50	2457.86	27.12	640.17	1936.73
581.44	93.28	529.26	517.75	369.41	415.85	741.31	284.35	1365.66	967.33
1822.40	1028.52	1962.53	1197.40	1989.23	1437.79	904.06	689.51	314.26	168.57
2967.21	278.60	438.03	645.14	1455.46	511.18	6070.34	771.29	335.07	1038.09
1266.85	3291.42	193.13	269.56	801.28	265.86	1053.49	82.59	355.88	4379.60
832.51	897.03	771.70	311.06	1500.25	372.29	220.19	154.50	237.25	1803.95
294.21	656.64	139.30	869.91	595.00	297.50	290.95	922.09	258.07	1402.29
1332.18	4068.46	60.82	423.65	1856.92	372.70	304.27	374.75	372.53	944.85
1515.86	431.46	43.56	4069.28	899.49	456.53	1132.15	83.83	442.46	2434.55
645.55	616.78	102.73	249.01	157.38	1329.72	346.31	994.00	1299.06	580.23
1081.53	173.41	529.26	131.90	580.21	320.92	488.24	85.88	1239.96	1040.58
196.83	389.14	1377.79	104.37	2293.72	2091.55	144.02	345.99	1095.53	
919.21	549.80	3316.49	855.52	1060.98	392.83	583.14	335.31	367.12	
3279.50	1775.15	437.21	1104.54	2420.28	490.22	199.38	300.79	347.14	
833.74	379.68	71.50	1092.21	500.49	5232.17	915.30	233.81	253.49	
509.12	507.89	150.81	991.95	830.05	1397.11	133.20	163.96		
294.21	1147.27	288.05	310.24	90.81	1333.83	2876.59	319.69		
396.94	1404.50	1020.30	337.77	1795.69	67.80		136.42		
145.87	1242.19	1073.31	322.98	2051.69	161.49		288.46		
1348.21	2372.21	4254.60	876.07	881.00	151.22		196.83		
394.48	278.60	37.80	207.51	704.31	603.22		264.22		
	42.32	1723.78	247.78	273.26	1095.50		64.51		
	373.11	37.80	1299.31	264.22	484.88		133.14		
	565.83	310.65		1787.48	126.15		1750.49		
		1382.73			193.13		91.22		
		1723.78			362.43		36.16		
					1134.12		30.82		
					274.49		72.73		
					2475.35		134.78		
					138.89		103.14		
					276.96		24.24		
					584.32		110.95		
					377.22				

**TABLE A-18 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 2 MALE RAW DATA: AP 3.0 MG/KG/DAY.**

					768.82				
					5214.50				
1153.38	687.33	690.04	679.63	1058.19	850.86	1005.49	393.58	792.72	1798.98
1111.75	774.85	904.41	811.27	1113.87	1108.08	1147.30	535.15	835.04	1311.29
								Mean	911.02
								StDev	382.33

**TABLE A-19. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 3 MALE RAW DATA: AP 1.0 MG/KG/DAY.**

160A1	161A1	162A1	163A1	164A1	165A1	524	525	526	527
283.12	650.07	466.80	126.97	313.94	1286.98	452.03	819.15	904.47	278.04
970.58	337.36	1861.85	320.10	95.33	397.77	3469.72	491.57	114.46	280.96
705.54	327.50	1362.18	1297.67	1202.75	822.65	1235.38	151.51	2529.87	466.18
504.19	202.58	1327.25	3334.98	1139.05	350.92	167.33	424.56	9878.04	1934.24
203.81	1118.51	1468.61	383.79	638.56	116.70	1371.49	206.45	765.45	285.95
50.13	1434.91	1140.70	246.96	3074.05	669.79	429.14	71.59	328.41	570.66
1220.41	68.21	1353.14	365.71	1014.14	1060.98	201.87	663.48	2079.08	111.13
733.48	452.83	529.67	2116.62	237.10	561.72	3143.81	1111.76	260.98	15.82
532.96	1149.74	2092.37	68.21	1867.60	1056.87	2052.03	191.05	4448.28	144.43
989.07	43.56	793.89	23.83	626.23	88.35	571.07	260.98	598.54	863.27
4186.39	673.90	1291.09	1229.45	518.98	521.04	686.79	3190.43	535.69	267.64
2339.74	9652.37	2615.47	666.50	762.25	1406.56	3077.21	2372.95	1613.32	126.12
749.51	282.71	185.73	1021.53	722.39	77.66	1484.70	427.47	1185.43	273.88
479.13	481.18	614.32	1705.70	905.24	1385.60	325.91	1314.05	157.75	99.90
290.52	173.00	120.40	1309.17	508.71	353.39	206.45	90.74	959.83	1060.56
1023.59	116.70	548.98	513.23	1392.18	492.28	948.60	360.04	3057.23	177.73
1432.45	343.52	661.16	261.34	760.19	1626.81	878.67	874.51	1970.86	861.19
83.83	145.46	1179.73	710.47	521.86	87.94	658.48	1211.24	1169.62	862.44
994.41	100.26	806.62	827.58	1409.85	285.17	491.99	111.97	318.00	236.00
1070.02	533.37	9704.55	461.46	1755.01	4516.35	1218.31	3961.71	1540.06	206.45
2513.15	168.06	794.30	130.67	3277.04	1180.56	2158.59	1274.09	4175.65	237.67
1864.73	129.03	280.65	1293.15	876.07	472.14	981.89	1900.94	4142.35	761.29
999.75	517.34	297.09	49.31	750.74	1796.93	182.31	2866.18	457.86	3721.54
1805.97	113.82	1744.33	2769.97	518.16	745.40	917.79	152.76	1465.97	412.49
5021.78	230.11	226.82	965.65	1479.29	1025.23	351.30	3473.47	345.06	511.13
2165.52	55.88	230.93	262.57	1146.04	1332.59	2653.49	751.30	82.00	791.68
3837.53	178.34	4598.54	63.69	2820.92	1934.58	737.57	165.66	239.33	1032.67
1100.84	960.72	538.71	1626.40	985.37	102.73	1051.41	573.99	1023.93	83.25
181.62	1669.95	509.53	424.89	170.53	1249.59	741.31	847.45	2624.77	1296.57
179.16	823.47	232.99	2948.72	2188.12	338.59	983.98	588.14	228.10	1705.31
1848.29	107.25	138.89	574.05	6056.87	2135.52	471.18	75.75	190.64	506.56

**TABLE A-19. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 3 MALE RAW DATA: AP 1.0 MG/KG/DAY.**

103.14	454.88	668.15	1319.44	798.41	175.87	1582.52	566.49	105.31	487.41
482.41	1542.16	479.13	59.17	2035.26	103.14	1634.96	1207.08	1711.97	290.11
282.30	176.69	288.46	1074.54	2681.62	1014.96	124.04	1379.81	970.66	206.87
200.94	552.27	361.60	669.38	956.20	584.73	387.51	610.61	678.04	77.84
996.88	634.04	754.44	752.79	743.34	1345.33	1303.64	1812.70	1304.89	41.62
142.59	677.60	721.98	1284.93	2031.97	1197.40	185.22	2995.21	330.49	2657.23
1842.95	815.66	168.06	1871.71	198.06	1090.98	233.51	75.34	161.50	223.52
231.76	129.03	844.84	731.43	1165.35	691.98	649.32	2568.99	1063.06	211.03
251.48	245.73	1309.58	3162.80	1738.99	1001.81	1330.70	1564.20	88.24	936.52
431.87	637.33	825.94	1347.80	1716.80	2530.41	445.37	342.14	489.49	321.75
1504.36	305.72	232.17	66.98	358.32	1376.56		2096.15	869.51	241.42
1549.97	396.53	373.11	329.14	975.51	952.09		777.52	531.11	156.50
691.16	166.42	152.86	1250.00	814.43	3329.64		3187.10	1846.83	1154.21
	136.42	321.75	89.58	1188.77	142.59		816.23	861.60	834.96
	73.55			1070.84	106.02		141.10	101.98	293.03
	322.57			103.96	267.51		136.52	243.91	488.66
5254.77				4417.74	189.02		960.25		566.49
439.27				2127.30	130.67		1707.39		1037.67
446.66				2458.91	1591.47		85.33		135.69
262.99					385.85		1587.93		943.18
387.90					704.31		2987.31		1036.00
192.31					1105.77				609.37
528.02									396.25
91.63									1031.84
295.04									
1865.14									
774.98									
27.94									
1397.52									
415.02									
448.31									
290.52									
675.95									

**TABLE A-19. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 3 MALE RAW DATA: AP 1.0 MG/KG/DAY.**

1115.29	692.22	1049.32	935.78	1346.33	933.91	1028.75	1126.58	1292.55	628.40
1111.21	1351.12	1547.57	866.42	1133.53	849.06	860.72	1056.32	1692.77	664.93
								Mean	1014.91
								StDev	230.26

**TABLE A-20. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 4 MALE RAW DATA: AP 0.1 MG/KG/DAY.**

154A1	155A1	156A1	157A1	158A1	159A1	520	521	522	523
169.71	1064.27	1474.77	1937.05	236.69	2327.83	641.83	2432.88	797.50	889.91
634.45	1628.86	434.34	4568.54	129.85	3163.63	459.11	989.39	1853.07	1235.38
1498.60	108.89	1798.98	741.29	153.68	752.79	522.79	1126.74	133.61	624.77
334.07	283.94	3438.94	77.25	2393.98	617.19	307.60	1070.97	841.62	1630.80
1542.98	362.84	156.15	461.05	220.66	765.53	1268.68	623.52	908.64	713.42
316.82	625.00	1485.04	618.43	444.20	2309.34	743.81	332.57	936.52	80.33
1251.23	348.46	743.75	167.65	135.60	1378.62	185.22	318.00	2431.22	1706.14
319.69	112.59	742.11	763.48	2001.97	922.50	94.90	1517.59	206.04	2049.53
4359.39	538.71	1273.83	421.19	733.48	1339.99	636.84	2390.43	620.19	2098.23
3595.50	248.60	1477.65	721.57	17.67	205.46	179.40	1503.43	5478.88	1860.56
1305.88	428.99	3236.77	454.06	791.42	982.50	228.10	1539.23	464.10	93.24
208.74	834.98	927.43	382.15	1758.71	271.61	333.82	1735.69	2544.85	2429.97
130.67	99.03	887.57	589.25	1070.02	189.43	50.78	2822.06	288.87	64.52
571.99	530.08	546.11	238.33	525.97	378.45	973.99	1689.91	1679.50	2119.88
91.63	170.94	604.04	1764.88	873.60	299.15	195.21	1224.97	354.63	1688.24
193.54	288.87	655.00	113.41	80.95	9574.29	346.72	455.78	124.87	158.59
260.11	459.81	186.56	243.67	161.08	246.96	1010.20	1752.76	133.20	1473.05
146.29	339.00	735.54	159.44	384.20	2010.60	619.77	457.86	939.85	2564.00
735.95	389.14	641.03	310.24	875.25	2236.60	1894.69	394.59	203.54	449.53
76.84	206.28	998.11	779.50	71.91	45.20	2901.56	1033.51	242.25	84.08
53.42	51.78	1076.18	137.25	216.14	363.25	755.88	1042.25	631.01	1341.10
547.34	536.65	2631.49	292.16	2059.91	2456.85	498.23	794.17	1013.94	2181.48
486.93	82.59	2152.78	334.90	466.80	841.14	129.87	1025.18	212.28	874.09
613.91	389.96	298.32	1418.89	79.31	1131.25	29.97	8442.46	2067.85	1002.29
136.42	99.85	2190.99	627.88	373.52	2014.30	1865.56	406.66	115.30	748.80
548.16	1481.34	152.86	437.21	57.53	1456.69	2504.06	1208.74	1440.17	240.17
193.95	78.90	3403.19	152.04	35.34	2471.24	2124.87	526.95	1287.83	1000.21
198.47	179.98	378.04	285.59	108.48	507.07	2325.49	134.03	191.88	2578.98
172.58	310.24	821.01	1538.46	261.34	111.36	1008.95	213.94	274.71	442.46
2551.36	251.07	1303.01	1239.32	2083.74	3394.97	1398.13	478.25	162.33	208.53
348.04	237.92	2004.44	556.38	1044.54	3115.14	1649.12	114.05	1232.05	1310.30
849.36	338.18	74.79	562.54	627.47	2634.78	111.13	38.71	147.76	2997.71



**TABLE A-20 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 4 MALE RAW DATA: AP 0.1 MG/KG/DAY.**

148.75	917.57	1119.74	203.40	1706.11	133.96	59.11	655.57	193.13	29.55
108.48	410.09	824.70	157.79	329.14	4429.65	85.74	356.30	433.72	599.38
756.08	124.10	2978.30	1236.85	729.78	514.46	591.05	320.08	436.21	376.69
3284.85	81.36	874.01	2004.44	249.84	457.76	148.60	57.44	872.84	547.35
375.16	232.17	3354.29	201.35	62.46	1126.32	261.39	431.63	987.72	2831.22
1101.25	91.63	4386.92	700.61	266.27	1865.96	782.52	4088.24	137.36	1956.30
318.87	730.19	141.35	364.48	1067.14	4971.24	42.04	110.30	894.07	297.61
102.73	92.87	2416.58	3018.57	323.39	577.75	201.46	1719.88	35.38	
401.87	219.84	1614.89	95.33	1339.17	86.70	19.15	380.44	504.06	
185.32	265.86	4133.79	377.22	117.93	1867.60	792.51	870.76	218.11	
165.60	1418.89	774.16	405.16	1142.34		74.51	361.29	920.29	
975.51	230.11	744.17	4037.64	1071.66		901.56	293.44	319.67	
97.39	555.56		99.03	2710.39		72.43		1900.10	
4759.62	70.27		177.93	615.55		1172.53		104.89	
960.31	745.40		120.81	2467.54		844.95		529.87	
1780.49	575.69		3497.70	198.06		376.69		825.81	
690.75	39.86		1090.16	1857.74				1390.64	
832.10	48.49		1339.17	718.69				660.56	
684.58	545.28		73.14	899.08				407.49	
835.80	414.20		431.87	66.57				45.37	
465.16	356.26		294.63	518.98				889.91	
555.97	40.68		922.91					120.29	
191.90	389.55		241.21					120.71	
203.40	150.39		324.62					942.77	
1086.46	500.08		3009.12					218.52	
248.60	85.47							241.00	
906.07	1253.70							388.35	
597.47								731.32	
419.13									
930.31									
7970.50									

**TABLE A-20 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 4 MALE RAW DATA: AP 0.1 MG/KG/DAY.**

898.17	401.58	1415.77	833.69	734.58	1584.45	717.13	1124.61	757.17	1168.68
1333.44	367.35	1142.17	1010.80	727.95	1751.76	724.04	1404.86	865.67	890.06
								Mean	963.58
								StDev	357.57

**TABLE A-21. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 5 MALE RAW DATA: AP 0 MG/KG/DAY.**

148A1	149A1	150A1	151A1	152A1	153A1	516	517	518	519
1169.46	1126.32	384.62	134.37	577.33	706.36	149.57	3107.18	228.93	151.93
466.39	235.45	5306.13	2617.93	170.12	1350.67	1310.40	270.14	740.06	536.94
852.24	152.45	1721.32	943.46	1465.32	821.01	394.07	1018.94	1206.24	926.54
1951.43	194.36	624.59	2431.38	2757.23	2580.95	5195.18	181.89	1729.03	1825.60
1244.25	137.25	499.26	198.06	1538.05	6349.44	1531.07	427.06	316.34	157.75
91.22	1185.08	56.71	2296.19	1194.12	318.87	1155.49	2098.65	116.96	947.35
345.99	171.35	16.85	2652.86	456.94	1463.26	234.63	38.29	2615.61	233.92
424.06	624.18	3996.14	7591.63	1930.88	78.90	2407.96	940.69	604.79	2136.94
3081.03	352.15	211.21	4826.18	7708.33	181.21	243.67	6687.62	4237.67	3162.54
1169.05	312.30	54.24	1264.38	3127.06	3316.90	2314.68	7198.34	417.90	244.75
79.72	843.61	2127.30	852.65	1566.40	535.83	257.64	1718.21	524.04	984.81
108.89	458.99	80.54	2558.76	138.89	587.20	1190.83	1657.44	1820.19	1085.12
771.29	274.90	358.73	178.75	3212.94	4221.73	705.13	3728.20	531.95	421.23
1918.56	528.44	61.23	311.88	571.17	163.54	942.23	471.18	1463.89	600.21
908.94	783.20	1552.43	222.72	2239.89	491.45	174.64	1202.08	445.37	956.50
486.93	332.43	151.63	1291.50	2228.39	390.37	249.43	464.93	3395.21	598.54
229.70	332.43	485.70	241.62	112.59	795.94	795.94	1120.08	1572.95	179.81
2031.97	175.05	1012.90	636.92	781.97	788.96	301.61	2652.65	436.21	2347.97
2789.69	339.83	1367.11	279.42	906.89	885.93	1628.86	4402.08	1636.21	1434.34
1503.12	967.70	2838.18	82.18	2025.40	69.86	288.46	4612.28	1786.47	29.97
399.41	1214.66	1331.36	883.47	1653.11	1107.41	2275.23	395.84	139.44	1079.29
2696.01	399.82	113.41	259.70	1867.19	107.66	334.48	3785.22	485.33	111.13
791.83	1295.61	75.20	128.62	2389.88	734.30	127.38	1985.02	323.83	891.16
3075.28	307.36	3311.14	330.38	7390.29	52.60	69.03	3669.51	189.39	2724.25
496.38	688.28	839.09	157.79	4521.29	1063.45	452.83	1950.05	248.08	3575.86
509.12	138.48	1761.59	1983.07	1545.04	40.68	297.50	1219.15	408.33	323.00
772.52	387.08	2755.18	69.44	1557.36	474.20	110.54	4626.43	306.35	1385.64
2630.67	201.76	4112.43	1925.54	1310.40	463.92	3761.10	1367.74	59.52	5014.36
1967.46	257.23	970.58	57.94	906.89	210.80	406.39	2168.99	104.06	307.18
507.48	364.48	1976.09	4845.09	1030.98	743.34	1784.19	256.82	113.63	266.81
2137.16	809.50	540.76	1925.54	3371.96	1906.23	3785.75	1311.55	500.73	2737.98
3158.28	149.98	161.49	2855.44	2154.42	1139.46	3444.69	1145.89	292.61	354.63

**TABLE A-21 (cont). THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 5 MALE RAW DATA: AP 0 MG/KG/DAY.**

2789.69	1360.95	349.69	2848.87	6706.11	391.60	1423.00	192.72	309.68	2042.87
1503.12	712.94	58.76	362.43	273.26	1505.59	1824.87	613.94	1243.70	3091.78
399.41	947.16	568.71	239.15	3443.87	1478.47	614.32	322.58	246.83	2795.42
2696.01	1455.05	526.79	1429.16	883.47	629.52	548.16	373.36	218.52	655.15
791.83	141.35	351.33	448.31	6283.28	156.56	738.82	134.44	226.43	151.09
3075.28	235.87	157.79	1049.47		1645.30	23.01	1076.38	303.85	2601.46
496.38	304.49	212.03	4410.75		293.39	8357.99	264.72	564.83	176.07
509.12	1102.07	1153.02			877.71	133.96	294.69	174.40	931.53
772.52	166.42	911.41			448.31	1192.88	591.88	621.44	2322.58
2630.67	129.85	420.37			1491.21	648.42	526.12	1140.90	3864.72
1967.46	177.52	70.27			6379.44	706.77	308.01	461.19	323.00
507.48	522.27	1649.82			100.67	1279.18	358.79	165.66	837.46
2137.16	53.01	83.01			701.02	382.56	1040.58	815.82	
3158.28	89.99	748.27			2027.04	214.50	4849.12	761.71	
	327.09	362.84			1106.18	1362.18	442.46	578.15	
	336.54				230.11	160.26	3073.05	589.39	
	363.66				67.80		567.74	565.25	
	2154.83							402.91	
	927.43							454.53	
	52.60							2996.05	
	217.78							622.27	
	202.17							292.20	
	36.57								
	495.97								
	943.46								
	284.76								
	271.61								
	46.84								
	992.36								
	1576.68								
	816.90								

**TABLE A-21. THYROID FOLLICULAR LUMEN AREAS (SQUARE MICROMETERS).  
81-86-DAY OLD RATS. GROUP 5 MALE RAW DATA: AP 0 MG/KG/DAY.**

1395.65	526.79	1031.47	1482.64	2216.18	1095.35	1206.91	1692.06	791.72	1307.44
1024.89	451.26	1225.78	1682.52	1989.90	1383.49	1544.75	1759.53	871.36	1223.73
								Mean	1274.62
								StDev	472.35

**TABLE A-22. MEAN THYROID FOLLICULAR COUNTS PER ANIMAL**  
**POST-NATAL DAY**  
**81-86 RAT STUDY**

<b>DOSE</b> <b>GROUP</b>	<b>5-DAY OLD PUP STUDY</b>		<b>81-86 RAT STUDY</b>	
	<b>FEMALES</b>	<b>MALES</b>	<b>FEMALES</b>	<b>MALES</b>
<b>10 mg</b>	122.6 <sub>+</sub> 17.3	114.2 <sub>+</sub> 24.1	54.6 <sub>+</sub> 9.1	49.4 <sub>+</sub> 7.8
<b>3 mg</b>	126.8 <sub>+</sub> 24.8	122.1 <sub>+</sub> 18.4	54.7 <sub>+</sub> 9.6	55.8 <sub>+</sub> 7.3
<b>1 mg</b>	131.9 <sub>+</sub> 19.8	128.0 <sub>+</sub> 27.4	49.7 <sub>+</sub> 13.0	49.6 <sub>+</sub> 6.7
<b>0.1 mg</b>	142.9 <sub>+</sub> 20.6	136.6 <sub>+</sub> 29.9	53.3 <sub>+</sub> 11.7	50.9 <sub>+</sub> 8.6
<b>0 mg</b>	133.9 <sub>+</sub> 15.6	134.8 <sub>+</sub> 18.5	58.5 <sub>+</sub> 11.0	47.8 <sub>+</sub> 7.3