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COMPUTER ASSISTED LABELLING IN MUTAGENICITY TESTING. I. THE DRO--ETC(U)
MAR 82 W W JEDERBERG, R A WIRTZ, N R POWERS

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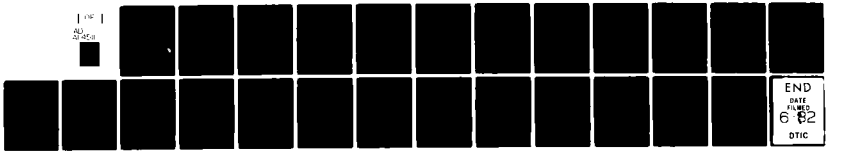

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)
This report presents the FORTRAN V programs utilized for the production of labels and cards for the Drosophila melanogaster sex-linked recessive lethal mutagenicity assay. This program provides for the efficient and correct labelling of articles used in the assay. The use of this program to produce parallel labels and cards not only reduces preparation time, but assures the proper sequence and completeness of the assay. This along with data storage and archiving also insures compliance with the requirements of the Food and Drug Administrations Good Laboratory Practices Act.

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TECHNICAL NOTE NO. 82-32TN

COMPUTER-ASSISTED LABELLING IN MUTAGENICITY TESTING

I. The Drosophila Melanogaster Sex-Linked Recessive Lethal Assay

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DIVISION OF RESEARCH SUPPORT

MARCH 1982

LETTERMAN ARMY INSTITUTE OF RESEARCH
PRESIDIO OF SAN FRANCISCO, CALIFORNIA 94129

COMPUTER-ASSISTED LABELLING IN MUTAGENICITY TESTING.
I. The Drosophila Melanogaster Sex-Linked Recessive Lethal Assay

PREFACE

This is the first in a series of technical notes on the utilization of the computer facilities at Letterman Army Institute of Research to assist in mutagenicity testing as part of the Institute's toxicology program. These reports will detail the use of the computer in labelling articles, recording, storing and retrieving data, and data analysis. Both the Salmonella mutagenicity and the Drosophila melanogaster sex-linked recessive lethal mutagenicity assays will be covered.

ACKNOWLEDGMENTS

The authors expre s their appreciation to the Information Sciences Group for making computer facilities readily available and to all those who have made suggestions for improving the utility of the program described herein.

COMPUTER-ASSISTED LABELLING IN MUTAGENICITY TESTING
I. The Drosophila Melanogaster Sex-Linked Recessive Lethal Assay

The mutagenicity testing of materials in compliance with Federal regulations (1) requires the implementation of an extensive labelling system which must be integrated with data collection, storage, data retrieval and analysis. The Drosophila melanogaster sex-linked recessive lethal assay is an often used mutagenicity test which requires the unique numbering of the test flies and their progeny, dilutions of test and control materials, and their multiple replicates. The detection of test materials with low mutagenic activity requires the concurrent testing of 7,000-10,000 X-chromosomes, depending on the spontaneous mutation frequency of the stock colonies (2,3), from both negative control and test material treated flies. Due to space and personnel limitations, we currently divide the testing of a single compound into four runs of approximately 2,500 X-chromosomes each for the negative control and test material treated flies as well as 500 X-chromosomes from positive control treated flies (4). This requires the generation of 880 unique, sequential labels and brood cards for testing a single compound. These items are currently hand labelled in most laboratories. We have designed and implemented a FORTRAN V program for the rapid generation of the large numbers of uniquely identified labels and cards. The use of this system has greatly reduced the time spent generating these materials, eliminated errors in numbering, and ensured continuity from the initation to the termination of the assay.

PROGRAM DESCRIPTION

The program (See Appendix A - SLRLABELS.FR) generates the labels and cards for the individual male flies that will be exposed to negative control, positive control, and test compounds.

As seen from the sample run (Figure 1), the program displays the following information (the underlined characters were entered at the time of the program execution by the user): The number of the last run for which labels and cards were prepared and the sequence number of the last male fly for which labels and cards were generated.

As can also be seen in the sample run (Figure 1) and the sample labels and cards (Figures 2-5), the identification number of the males is composed of two fields: the first designates the nature of the compound (C - negative control, P - positive control, and T - test compound) and which of the series of compounds it is by an integer

designator from 1 to 5. In the case of test substances, a repetition number is also printed. The second field of the male identification is the integer sequence number of the fly.

The program requests the following information from the user (refer to Figure 1):

- The initial sequence number to be used for the flies of this run.

- The maximum sequence number to be used for the flies of this run. If the maximum sequence number, minus the minimum sequence number, is greater than 100, then the user must re-enter both values. This feature is utilized because experience has shown that 25 is a reasonable practical limit for setting up the assay in our laboratory.

- The new run number.

- The number of negative control compounds (a maximum of five is allowed) for which labels and cards are to be prepared to permit the concurrent testing of several control compounds.

- The codes for each of the negative control compounds. The user is allowed up to six characters of any type for the designation of each compound.

- The number of positive control compounds (a maximum of five is allowed) for which labels and cards are to be prepared.

- The maximum sequence number for the positive control compounds (usually, there is no need for as many flies to be exposed to the positive control as to the negative control and test compounds).

- The codes for the positive control compounds. The user is allowed up to six characters of any type for the designation of each compound.

- The number of test compounds (a maximum of five is allowed).

- The codes for the test compounds. Again, the user is allowed up to six characters of any type for the designation of each compound.

- The repetition number for each test compound. As is illustrated in Figure 1, no number greater than 99 is allowed.

- The dates for each of the four broods.

As the text for the labels and cards is generated by brood, a message is displayed at the user's terminal to indicate what has been prepared and the files in which they are stored.

After the text for all the labels and cards have been placed in the files DLABELS and BCARDS, the user is so notified and may print the labels and cards out on an appropriate device (usually a printer with a tractor feed). The program is formatted so that the labels and cards should be printed on continuous-feed single-width stock material. These may be obtained from MISCO, 936 Holmdel Keyport Road, Box 399, Holmdel, N.J. 07733, or other distributor of computer related items. The labels are the standard 1 X 3.5 inches and the cards are standard 3 x 5 inches.

All cards and labels are generated so that they are uniquely identified and parallel one another. They are prepared in the sequence in which they will be used. The cards provide permanent records and greatly facilitate data entry into permanent data files on the computer.

DISCUSSION

By utilizing the program and subroutines presented in the report we have realized a significant savings in time for the preparation of materials for the Drosophila melanogaster sex-linked recessive lethal mutagenicity assay. The labels and cards have also been of great help in maintaining order and uniformity while running this assay.

CONCLUSION

None.

RECOMMENDATION

None.

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5. WIRTZ, R.A. and H.S. Semey. The Drosophila kitchen - equipment, media preparation and supplies. Drosophila Information Services (In Press)

```
) X SLRLABELS

 SLRL-DROSOPHILA LABELS . . . . . .


 THE LAST RUN WAS:   33
 THE LAST SEQUENCE NUMBER WAS:  813

 GLP STUDY NO. ? (I5) 12345

 INITIAL SEQUENCE NUMBER ? 810
 MAXIMUM SEQUENCE NUMBER ? 813

 WHAT IS THE NEW RUN NUMBER ? 33

 HOW MANY NEGATIVE CONTROL COMPOUNDS ? (MAX.-5) 1

 WHAT IS THE CODE FOR THE NEGATIVE CONTROL #: 1 ? (AN/6)
NEGONE


 HOW MANY POSITIVE CONTROL COMPOUNDS ? (MAX.-5) 1
 MAXIMUM SEQUENCE NUMBER FOR POSITIVE CONTROLS ? 811

 WHAT IS THE CODE FOR THE POSITIVE CONTROL #: 1 ? (AN/6)
POSONE


 HOW MANY TEST COMPOUNDS ? (MAX.-5) 2

 WHAT IS THE CODE FOR TEST COMPOUND #: 1 ? (AN/6)
T-ONE
 WHAT IS THE REPETITION NUMBER FOR THIS COMPOUND ? (I2) 2

 WHAT IS THE CODE FOR TEST COMPOUND #: 2 ? (AN/6)
T-TWO
 WHAT IS THE REPETITION NUMBER FOR THIS COMPOUND ? (I2) 100
 WHAT IS THE REPETITION NUMBER FOR THIS COMPOUND ? (I2) 45
```

Figure 1. Sample run of SLRLABELS.FR

```
          INPUT BROOD DATES
 DATE FOR BROOD: 1 ? (XXMONXX)
99DEC99
 DATE FOR BROOD: 2 ? (XXMONXX)
99DEC99
 DATE FOR BROOD: 3 ? (XXMONXX)
99DEC99
 DATE FOR BROOD: 4 ? (XXMONXX)
99DEC99

     WAIT FOR OUTPUT . . . . . .

          RUN:   33


          BROOD: 1

LABELS AND CARDS FOR C1-NEGONE ARE IN 'DLABELS' AND 'BCARDS'

LABELS AND CARDS FOR P1-POSONE ARE IN 'DLABELS' AND 'BCARDS'

LABELS AND CARDS FOR T1-T-ONE  ARE IN 'DLABELS' AND 'BCARDS'

LABELS AND CARDS FOR T2-T-TWO  ARE IN 'DLABELS' AND 'BCARDS'

          BROOD: 2

LABELS AND CARDS FOR C1-NEGONE ARE IN 'DLABELS' AND 'BCARDS'

LABELS AND CARDS FOR P1-POSONE ARE IN 'DLABELS' AND 'BCARDS'

LABELS AND CARDS FOR T1-T-ONE  ARE IN 'DLABELS' AND 'BCARDS'

LABELS AND CARDS FOR T2-T-TWO  ARE IN 'DLABELS' AND 'BCARDS'

          BROOD: 3

LABELS AND CARDS FOR C1-NEGONE ARE IN 'DLABELS' AND 'BCARDS'

LABELS AND CARDS FOR P1-POSONE ARE IN 'DLABELS' AND 'BCARDS'
```

Figure 1. Sample run of SLRLABELS.FR
(Continued)

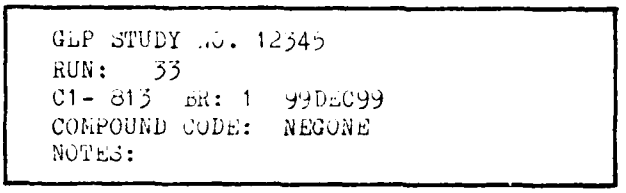
```
LABELS AND CARDS FOR T1-T-ONE  ARE IN 'DLABELS' AND 'BCARDS'
LABELS AND CARDS FOR T2-T-TWO  ARE IN 'DLABELS' AND 'BCARDS'

         BROOD: 4
LABELS AND CARDS FOR C1-NEGONE ARE IN 'DLABELS' AND 'BCARDS'
LABELS AND CARDS FOR P1-POSONE ARE IN 'DLABELS' AND 'BCARDS'
LABELS AND CARDS FOR T1-T-ONE  ARE IN 'DLABELS' AND 'BCARDS'
LABELS AND CARDS FOR T2-T-TWO  ARE IN 'DLABELS' AND 'BCARDS'

ALL LABELS AND CARDS ARE READY IN 'DLABELS' AND 'BCARDS'

)
```

Figure 1. Sample run of SLRLABELS.FR
(Continued)



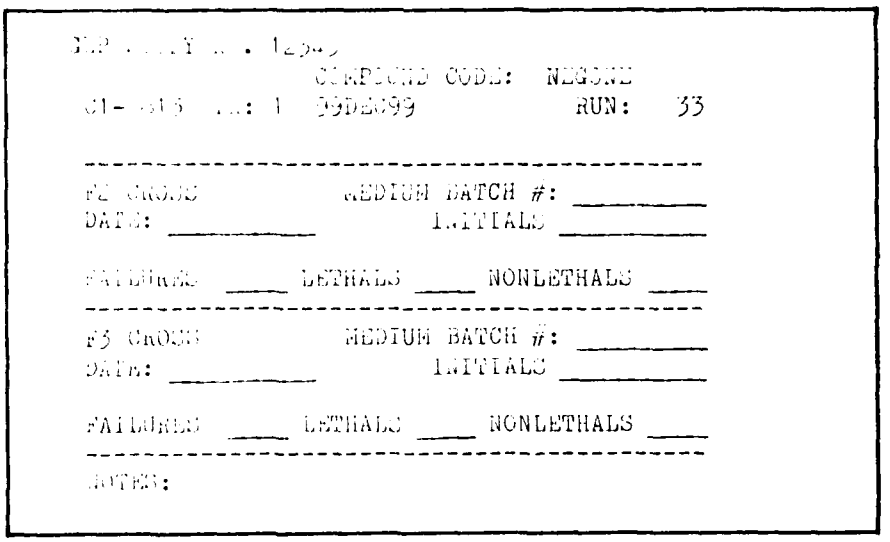
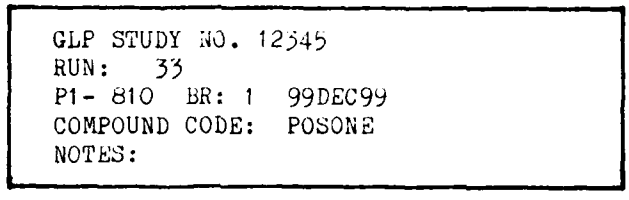


Figure 2. Sample Negative Control Label and Card



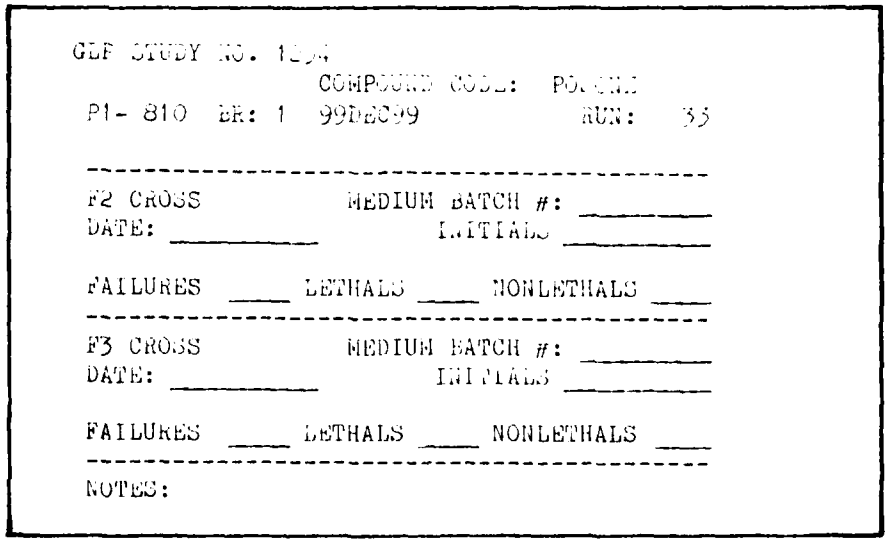
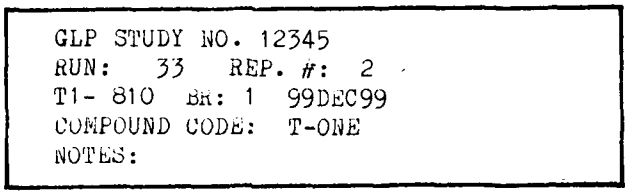


Figure 3. Sample Positive Control Label and Card



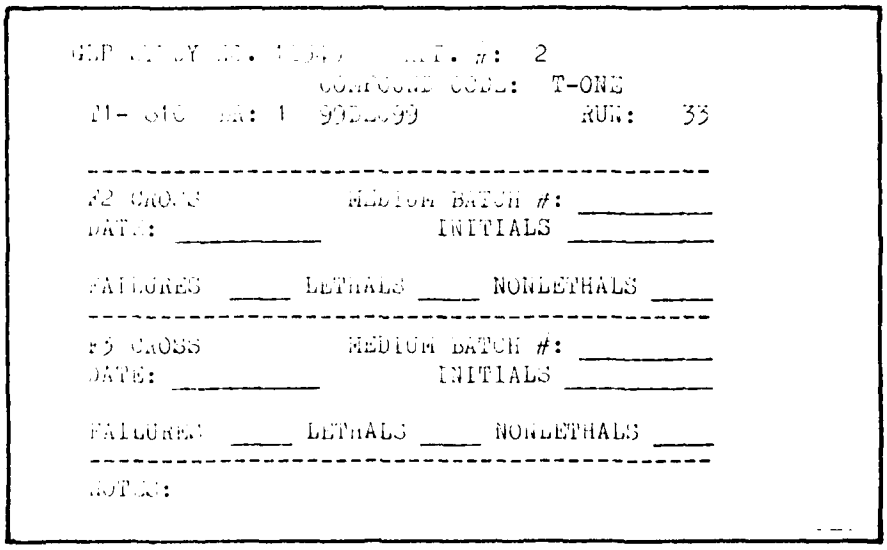
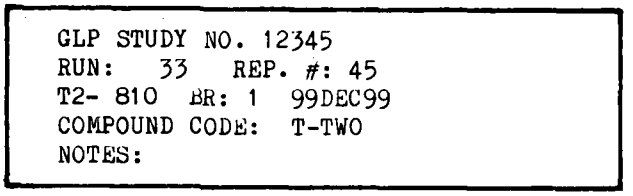


Figure 4. Sample Test Compound
Label and Card



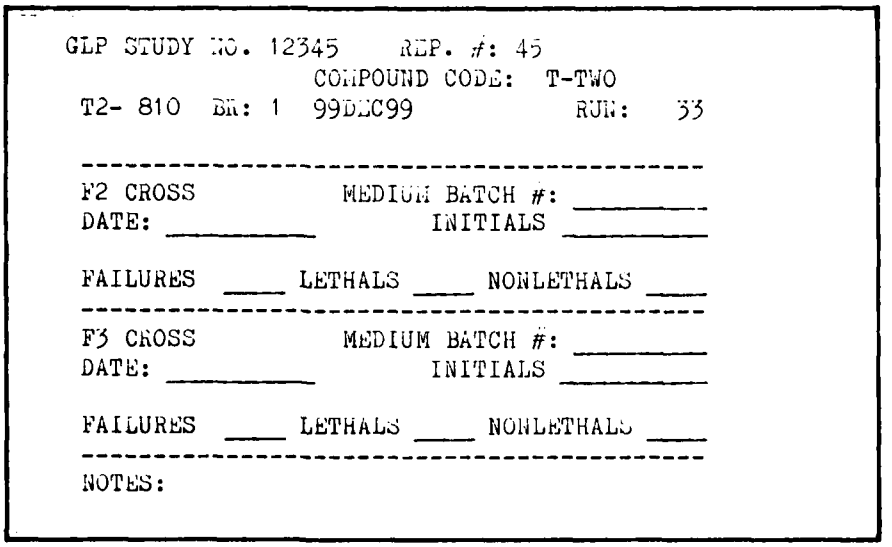


Figure 5. Sample Test Compound Label and Card

APPENDICES

APPENDIX A

SLRLABELS.FR

```
C --- PROGRAM NAME:          SLRLABELS.FR
C --- WRITTEN BY:            WARREN W. JEDERBERG
C --- SUBROUTINES:           NBLABELS.FR, NTBLABELS.FR
C --- INPUT:                 AT TIME OF EXECUTION:
C ---       RANGE OF LABELS, RUN NUMBER, BROOD DATES
C ---       COMPOUND CODES, COMPOUND NUMBERS
C --- FORMAT FOR INPUT:      CRT OR DASHER
C --- PURPOSE:               TO GENERATE LABELS AND CARDS FOR THE
C ---         SEX-LINKED RECESSIVE LETHAL DROSOPHILA  ASSAY.
C ---         THIS PROGRAM AND SUBROUTINES GENERATE THE LABELS FOR
C ---         THE NEGATIVE CONTROL COMPOUND(S), THE POSITIVE CONTROL
C ---         COMPOUND(S), AND THE TEST COMPOUND(S) IN ORDER OF BROOD.
C ---         A MAXIMUM SEQUENCE OF 100 IS ALLOWED AND UP TO 5 OF EACH
C ---         COMPOUND.  THE LABELS ARE STORED IN 'DLABELS'.

C --- THE SUBROUTINES NBLABELS.FR AND NTBLABELS.FR ARE USED.
C ---
      INTEGER CCOM, PCR, PCOM, TCOM, IR, UR, B, TL, IDATE
      DIMENSION CCOM(6,5), PCOM(6,5), TCOM(6,5), IDATE(7,4),NREP(5)

C *** LOG ON NOTE
      TYPE
      TYPE " SLRL-DROSOPHILA LABELS . . . . . ."
      TYPE
C ---
C *** GET THE LAST RUN AND SEQUENCE NUMBERS
      OPEN 2, "LDLABEL", ATT="SIB"
      READ(2,1) NR,LL
    1 FORMAT (2(1X,I4))
      WRITE (10,2) NR,LL
    2 FORMAT\/,1X,"THE LAST RUN WAS:",1X,I4,/,
     1 1X,"THE LAST SEQUENCE NUMBER WAS:",1X,I4)
      CLOSE 2
  ---

C *** GET THE GLP STUDY NUMBER
  100 CONTINUE
      TYPE
      ACCEPT " GLP STUDY NO. ? (I5) ",GSN
      IF (GSN.GT.99999) GO TO 100
C ---

C *** INPUT AND CHECK THE SEQUENCE RANGE
  700 CONTINUE
      TYPE
```

```
      ACCEPT " INITIAL SEQUENCE NUMBER ? ",IR
      ACCEPT " MAXIMUM SEQUENCE NUMBER ? ",UR
C --- CHECK RANGE
      TL = UR-IR
      IF (TL.LE.100) GO TO 300
      TYPE
      TYPE " ++++++++++ERROR++++++++++"
      TYPE "  MAXIMUM - INITIAL > 100"
      GO TO 700
  300 CONTINUE
C ---
C *** INPUT NEW RUN NUMBER
      TYPE
      ACCEPT " WHAT IS THE NEW RUN NUMBER ? ",NR
      TYPE
C ---
C *** INPUT COMPOUND CODES
C --- NEGATIVE CONTROL COMPOUND(S)
  400 CONTINUE
      ACCEPT " HOW MANY NEGATIVE CONTROL COMPOUNDS ? (MAX.-5) ",NNC
      IF (NNC.GT.5) GO TO 400
      TYPE
      DO 90 I=1,NNC
      WRITE (10,3) I
    3 FORMAT (1X,"WHAT IS THE CODE FOR THE NEGATIVE CONTROL #:",1X,I1,1X,
     1"? (AN/6)")
      READ (11,4) (CCOM(K,I) K=1,6)
    4 FORMAT (6A1)
   90 CONTINUE
      TYPE
      TYPE
C ---
C --- POSITIVE CONTROL COMPOUND(S)
  500 CONTINUE
      ACCEPT " HOW MANY POSITIVE CONTROL COMPOUNDS ? (MAX.-5) ",NPC
      IF(NPC.GT.5) GO TO 500
C *** GET NUMBER FOR POSITIVE CONTROL SEQUENCE
  900 CONTINUE
      ACCEPT " MAXIMUM SEQUENCE NUMBER FOR POSITIVE CONTROLS ? ",PUR
      PTL = PUR - IR
      IF (PTL.LE.100) GO TO 800
      TYPE
      TYPE " ++++++++++ERROR+++++++++"
      TYPE " MAXIMUM - INITIAL > 100"
      GO TO 900
  800 CONTINUE
C ---
```

APPENDIX A
(CONTINUED)

```
      TYPE
      DO 20 I=1,NPC
      WRITE (10,5) I
    5 FORMAT (1X,"WHAT IS THE CODE FOR THE POSITIVE CONTROL #:",1X,I1,1X
     1"? (AN/6)")
      READ (11,4) (PCOM(K,I) K=1,6)
   20 CONTINUE
      TYPE
      TYPE
C ---
C --- TEST COMPOUND(S)
  600 CONTINUE
      ACCEPT " HOW MANY TEST COMPOUNDS ? (MAX.-5) ",NTC
      IF (NTC.GT.5) GO TO 600
      DO 30 I=1,NTC
      TYPE
      WRITE (10,6) I
    6 FORMAT(1X,"WHAT IS THE CODE FOR TEST COMPOUND #:",1X,I1,1X,
     1"? (AN/6)")
      READ (11,4) (TCOM(K,I) K=1,6)

C --- GET THE REPETITION NUMBER
  123 CONTINUE
      ACCEPT " WHAT IS THE REPETITION NUMBER FOR THIS COMPOUNT ? (I2) ",
     1NREP(I)
      IF (NREP(I).GT.99) GO TO 123
C ---
   30 CONTINUE
      TYPE
      TYPE
C ---
C *** INPUT BROOD DATES
      TYPE
      TYPE
      TYPE "          INPUT BROOD DATES"
      DO 40 B =1,4
      WRITE (10,7) B
    7 FORMAT (1X,"DATE FOR BROOD:",1X,I1,1X,"? (XXMONXX)")
      READ (11,8) (IDATE (K,B) K=1,7)
    8 FORMAT (7A1)
   40 CONTINUE
C ---
C *** MESSAGE
      TYPE
      TYPE "     WAIT FOR OUTPUT . . . . . "
C ---
```

```
C *** MAKE LABELS FOR EACH BROOD
C --- OPEN FILE 'DLABELS'
      DELETE "DLABELS"
      OPEN 1, "DLABELS", ATT = "SOP"
      DELETE "BCARDS"
      OPEN 3, "BCARDS", ATT = "SOP"

C ---
C *** OUTPUT RUN NUMBER
      WRITE (10,9) NR
    9 FORMAT (/,10X,"RUN:",1X,I4,/)
C ---
C *** LABELS MADE BY BROOD
      DO 50 B = 1,4
      WRITE (10,10) B
   10 FORMAT (/,10X,"BROOD:",1X,I1)
C ---
C --- NEGATIVE CONTROL LABELS
      K = "C"
      DO 60 I=1,NNC
      CALL NBLABELS (GSN,NR,K,I,IR,UR,CCOM(1,I),B,IDATE(1,B))
   60 CONTINUE
C ---
C --- POSITIVE CONTROL LABELS
      K = "P"
      DO 70 I=1,NPC
      CALL NBLABELS (GSN,NR,K,I,IR,PUR,PCOM(1,I),B,IDATE(1,B))
   70 CONTINUE
C ---
C --- TEST COMPOUND LABELS
      K = "T"
      DO 80 I=1,NTC
      CALL NTBLABELS (GSN,NR,NREP(I),K,I,IR,UR,TCOM(1,I),B,IDATE(1,B))
   80 CONTINUE
C ---
      TYPE
   90 CONTINUE
C ---
      CLOSE 1
      CLOSE 3

C *** END MESSAGE
      TYPE
      TYPE " ALL LABELS AND CARDS ARE READY IN 'DLABELS' AND 'BCARDS'"
      TYPE
C ---
      END
```

APPENDIX B

NBLABELS.FR

```
C --- SUBROUTINE NAME:          NBLABELS.FR
C --- WRITTEN BY:       WARREN JEDERBERG, CUTANEOUS HAZARDS
C --- SUBROUTINES:      NONE
C --- INPUT:            GSN,NR,K,P,L,M,LCOM,N,IDATE
C ---                   GSN = GLP STUDY NUMBER
C ---                   NR = RUN NUMBER
C ---                   K = "C", "P",
C ---                   L = INITIAL VALUE
C ---                   M = MAXIMUM VALUE
C ---                   LCOM = COMPOUND CODE
C ---                   N = BROOD #
C ---                   P = SUBGROUP
C ---                   IDATE = PROPER DATE PER BROOD
C --- FORMAT FOR INPUT:  SEE SLRLABELS.FR

C --- PURPOSE:          GENERATES LABELS AND CARDS FOR THE NEGATIVE AND
C --- POSITIVE CONTROLS FOR THE SLRL DROSOPHILA ASSAY.  SUPPORTS THE
C --- MAIN PROGRAM SLRLABELS.FR ALONG WITH NTBLABELS.FR.
C ---
      SUBROUTINE NBLABELS (GSN,NR,K,P,L,M,LCOM,N,IDATE)
      INTEGER I,P
      DIMENSION IDATE(7), LCOM(6)
      DO 10 I=L,M
      WRITE (1,3) GSN,NR,K,P,I,N,IDATE,LCOM


    3 FORMAT (1X,"GLP STUDY NO.",1X,I5,/,
     11X,"RUN:",1X,I4,/,1X,A1,I1,"-",I4,2X,"BR:",
     21X,I1,2X,7A1,/,
     21X,"COMPOUND CODE:",2X,6A1,/,1X,"NOTES:",/)
C --- PREPARE CORRESPONDING CARD
      WRITE (3,7) GSN,LCOM,K,P,I,N,IDATE,NR

    7 FORMAT (1X,"GLP STUDY NO.",1X,I5,/,
     118X,"COMPOUND CODE:",2X,6A1,/,
     22X,A1,I1,"-",I4,2X,"BR:",1X,I1,2X,7A1,11X,"RUN:",1X,I4,//,
     32X,"-----------------------------------------",/,
     42X,"F2 CROSS          MEDIUM BATCH #: _________",/,
     52X,"DATE: _________          INITIALS _________",//,
     62X,"FAILURES ____ LETHALS ____ NONLETHALS ____",/,
     72X,"-----------------------------------------",/,
     82X,"F3 CROSS          MEDIUM BATCH #: _________",/,
     92X,"DATE: _________          INITIALS _________",//,
     12X,"FAILURES ____ LETHALS ____ NONLETHALS ____",/,
     22X,"-----------------------------------------",/,
```

APPENDIX B
(CONTINUED)

```
     32X,"NOTES:",//)
  10 CONTINUE
C --- STORE LAST SEQUENCE # IN "LDLABEL"
      LL = I-1
      OPEN 2, "LDLABEL", ATT = "SO"
      WRITE (2,5) NR,LL
    5 FORMAT (2(1X,I4))
      CLOSE 2
C --- USER NOTE
      WRITE (10,6) K,P,LCOM
    6 FORMAT (/,1X,"LABELS AND CARDS FOR",1X,A1,I1,"-",
     16A1,1X,"ARE IN 'DLABELS' AND 'BCARDS'")
      RETURN
      END
```

APPENDIX C

NTBLABELS.FR

```
C --- SUBROUTINE NAME:          NTBLABELS.FR
C --- WRITTEN BY:       WARREN JEDERBERG, CUTANEOUS HAZARDS
C --- SUBROUTINES:      NONE
C --- INPUT:            GSN,NR,NREP,K,P,L,M,LCOM,N,IDATE
C ---                   GSN = GLP STUDY NUMBER
C ---                   NR = RUN NUMBER
C ---                   NREP = REPETITION NUMBER

C ---                   K= "T"
C ---                   L = INITIAL VALUE
C ---                   M = MAXIMUM VALUE
C ---                   LCOM = COMPOUND CODE
C ---                   N = BROOD #
C ---                   P = SUBGROUP
C ---                   IDATE = PROPER DATE PER BROOD
C --- FORMAT FOR INPUT:  SEE SLRLABELS.FR

C --- PURPOSE:          SUBROUTINE TO GENERATE LABELS AND CARDS FOR THE
C --- TEST COMPOUNDS USED IN THE SLRL DROSOPHILA ASSAY. SUPPORTS THE
C --- PROGRAM SLRLABELS.FR ALONG WITH NTLABELS.FR.
C ---
      SUBROUTINE NTBLABELS (GSN,NR,NREP,K,P,L,M,LCOM,N,IDATE)
      INTEGER I,P
      DIMENSION IDATE(7), LCOM(6)
      DO 10 I=L,M
      WRITE (1,3) GSN,NR,NREP,K,P,I,N,IDATE,LCOM


 3    FORMAT (1X,"GLP STUDY NO.",1X,I5,/,
     11X,"RUN:",1X,I4,3X,"REP. #:",1X,I2,/,1X,A1,I1,"-",I4,2X,"DATE:",
     21X,I1,2A,7A1,/,
     31X,"COMPOUND CODE:",2X,6A1,/,1X,"NOTES:",/)
C --- PREPARE CORRESPONDING CARD
      WRITE (3,7) GSN,NREP,LCOM,K,P,I,N,IDATE,NR

 7    FORMAT (1X,"GLP STUDY NO.",1X,I5,4X,"REP. #:",1X,I2,/,
     118X,"COMPOUND CODE:",2X,6A1,/,
     22X,A1,I1,"-",I4,2X,"BR:",1X,I1,2A,7A1,11X,"RUN:",1X,I4,//,
     32X,"-----------------------------------------",/,
     42X,"F2 CROSS          MEDIUM BATCH #: _________",/,
     52X,"DATE: _________      INITIALS _________",//,
     62X,"FAILURES ____ LETHALS ____ NON-LETHALS ____",/,
     72X,"-----------------------------------------",/,
     82X,"F3 CROSS          MEDIUM BATCH #: _________",/,
```

APPENDIX C
(CONTINUED)

```
     9?X,"DATE: _____          INITIALS _____",//,
     12X,"FAILURES ____ LETHALS ____ NONLETHALS ____",/,
     2?X,"----------------------------------------",/,
     5?X,"NOTES:",//)
  10 CONTINUE
C --- STORE LAST SEQUENCE # IN "LDLABEL"
      LL = I-1
      OPEN 2, "LDLABEL", ATT = "SO"
      WRITE (2,5) NR,LL
 5    FORMAT (2(1X,I4))
      CLOSE 2
C --- USER NOTE
      WRITE (10,6) K,P,LCOM
 6    FORMAT (/,1X,"LABELS AND CARDS FOR",1X,A1,I1,"-",
     1?A1,1X,"ARE IN 'DLABELS' AND 'BCARDS'")
      RETURN
      END
```

END

DATE
FILMED
6-82

DTIC