

**Experiment Number:** 20725 - 03  
**Test Type:** CHRONIC  
**Route:** RESPIRATORY EXPOSURE WHOLE BODY  
**Species/Strain:** RATS/Wistar Han

**P11: STATISTICAL ANALYSIS OF SURVIVAL DATA**  
2,3-Butanedione  
**CAS Number:** 431-03-8

**Date Report Requested:** 04/12/2016  
**Time Report Requested:** 16:27:55  
**First Dose M/F:** 08/17/09 / 08/17/09  
**Lab:** BNW

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**NTP Study Number:** C20725  
**Lock Date:** 10/11/2012  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**Study Gender:** Both  
**TDMSE Version:** 3.0.2.3\_002  
**PWG Approval Date:** 01/15/2016



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**MALE RATS**

FIRST TERMINAL SACRIFICE AT 729 DAYS

KAPLAN-MEIER SURVIVAL PROBABILITY ESTIMATES (%)										
DOSE	TIME (DAYS)									
	90	180	270	365	425	485	545	605	665	729(A)
Control	100.0	100.0	100.0	100.0	98.0	96.0	90.0	90.0	80.0	72.0
12.5 ppm	100.0	98.0	98.0	98.0	98.0	98.0	98.0	92.0	80.0	74.0
25 ppm	98.0	98.0	98.0	96.0	96.0	96.0	90.0	80.0	78.0	66.0
50 ppm	100.0	100.0	100.0	100.0	100.0	100.0	94.0	74.0	56.0	44.0

(A) FIRST TERMINAL SACRIFICE  
 (B) THE FIRST ENTRY IS THE TREND TEST (TARONE, 1975) RESULT. SUBSEQUENT ENTRIES ARE THE RESULTS OF PAIRWISE TESTS (COX, 1972). NEGATIVE TRENDS ARE INDICATED BY "N".  
 (C) MEAN OF ALL UNCENSORED DEATHS PRIOR TO TERMINAL SACRIFICE  
 (D) MEAN OF ALL DEATHS (UNCENSORED, CENSORED, TERMINAL SACRIFICE)

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FIRST TERMINAL SACRIFICE AT 729 DAYS

SURVIVAL SUMMARY STATISTICS				
DOSE	Control	12.5 ppm	25 ppm	50 ppm
<b>SURVIVAL AT END OF STUDY</b> (KAPLAN-MEIER)	72.0%	74.0%	66.0%	44.0%
<b>SIGNIFICANCE (B)</b> (LIFE TABLE)	P=0.001	P=0.986N	P=0.626	P=0.007
<b>MEAN DAY OF NATURAL DEATHS (C)</b> (STANDARD ERROR)	598.1 (29.3)	602.5 (37.6)	574.4 (42.3)	616.5 (11.3)
<b>MEAN LIFE SPAN (D)</b> (STANDARD ERROR)	692.3 (11.6)	696.1 (12.4)	676.4 (17.6)	666.0 (10.1)

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**FEMALE RATS**

FIRST TERMINAL SACRIFICE AT 731 DAYS

KAPLAN-MEIER SURVIVAL PROBABILITY ESTIMATES (%)										
DOSE	TIME (DAYS)									
	90	180	270	365	425	485	545	605	665	731(A)
Control	100.0	100.0	98.0	98.0	96.0	96.0	96.0	88.0	78.0	68.0
12.5 ppm	100.0	98.0	98.0	98.0	94.0	94.0	92.0	84.0	76.0	62.0
25 ppm	100.0	100.0	100.0	98.0	98.0	92.0	82.0	78.0	68.0	48.0
50 ppm	100.0	100.0	100.0	100.0	100.0	98.0	92.0	90.0	74.0	60.0

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FIRST TERMINAL SACRIFICE AT 731 DAYS

SURVIVAL SUMMARY STATISTICS				
DOSE	Control	12.5 ppm	25 ppm	50 ppm
<b>SURVIVAL AT END OF STUDY</b> (KAPLAN-MEIER)	68.0%	62.0%	48.0%	60.0%
<b>SIGNIFICANCE (B)</b> (LIFE TABLE)	P=0.507	P=0.723	P=0.077	P=0.591
<b>MEAN DAY OF NATURAL DEATHS (C)</b> (STANDARD ERROR)	597.6 (29.3)	599.7 (33.8)	604.4 (21.3)	631.8 (18.2)
<b>MEAN LIFE SPAN (D)</b> (STANDARD ERROR)	688.3 (12.8)	681.1 (15.6)	665.2 (14.2)	691.3 (10.0)

\*\*\* END OF REPORT \*\*\*

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