

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

**E05: CLINICAL OBSERVATIONS SUMMARY**

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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 Lab: BNW

SEX: MALE		WEEK: 105							
OBSERVATION	Control		12.5 ppm		25 ppm		50 ppm		
	CURRENT*	TOTAL+	CURRENT	TOTAL	CURRENT	TOTAL	CURRENT	TOTAL	
Abnormal Breathing	0 / 0	2 / 50 DAY 309	0 / 0	2 / 50 DAY 687	0 / 0	1 / 50 DAY 561	0 / 0	14 / 50 DAY 29	
Diarrhea	0 / 0	1 / 50 DAY 561	0 / 0	0/50	0 / 0	1 / 50 DAY 505	0 / 0	2 / 50 DAY 505	
Eye Abnormality	0 / 0	1 / 50 DAY 169	0 / 0	6 / 50 DAY 533	0 / 0	24 / 50 DAY 281	0 / 0	35 / 50 DAY 421	
Head Tilt	0 / 0	1 / 50 DAY 701	0 / 0	0/50	0 / 0	1 / 50 DAY 589	0 / 0	0/50	
Lethargic	0 / 0	0/50	0 / 0	0/50	0 / 0	2 / 50 DAY 561	0 / 0	1 / 50 DAY 659	
Mass Appendage	0 / 0	3 / 50 DAY 393	0 / 0	0/50	0 / 0	1 / 50 DAY 533	0 / 0	1 / 50 DAY 393	
Mass Head	0 / 0	1 / 50 DAY 659	0 / 0	1 / 50 DAY 505	0 / 0	0/50	0 / 0	1 / 50 DAY 561	
Mass Torso/Dorsal	0 / 0	2 / 50 DAY 449	0 / 0	3 / 50 DAY 505	0 / 0	2 / 50 DAY 421	0 / 0	0/50	

\* ANIMALS WITH OBSERVATION IN CURRENT PERIOD / TOTAL ANIMALS OBSERVED IN CURRENT PERIOD (WITHIN 30 DAYS OF RUN DATE)  
 + ROW 1 = CUMULATIVE NO. OF ANIMALS WITH OBSERVATION / TOTAL ANIMALS STARTED ON STUDY  
 ROW 2 = DAY OF ONSET

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OBSERVATION	Control		12.5 ppm		25 ppm		50 ppm		
	CURRENT*	TOTAL+	CURRENT	TOTAL	CURRENT	TOTAL	CURRENT	TOTAL	
<b>Mass</b> Torso/Lateral	0 / 0	0/50	0 / 0	2 / 50 DAY 715	0 / 0	2 / 50 DAY 393	0 / 0	2 / 50 DAY 589	
<b>Mass</b> Torso/Ventral	0 / 0	0/50	0 / 0	0/50	0 / 0	1 / 50 DAY 701	0 / 0	1 / 50 DAY 687	
<b>Nasal/Eye Discharge</b>	0 / 0	1 / 50 DAY 449	0 / 0	0/50	0 / 0	6 / 50 DAY 533	0 / 0	14 / 50 DAY 337	
<b>Ruffled Fur</b>	0 / 0	1 / 50 DAY 673	0 / 0	0/50	0 / 0	1 / 50 DAY 561	0 / 0	0/50	
<b>Thin</b>	0 / 0	5 / 50 DAY 365	0 / 0	7 / 50 DAY 169	0 / 0	8 / 50 DAY 505	0 / 0	13 / 50 DAY 589	
<b>Ulcer/Abscess</b> Appendage	0 / 0	12 / 50 DAY 505	0 / 0	7 / 50 DAY 421	0 / 0	16 / 50 DAY 449	0 / 0	16 / 50 DAY 281	
<b>Ulcer/Abscess</b> Torso/Dorsal	0 / 0	0/50	0 / 0	2 / 50 DAY 589	0 / 0	3 / 50 DAY 589	0 / 0	0/50	
<b>Ulcer/Abscess</b> Torso/Lateral	0 / 0	0/50	0 / 0	1 / 50 DAY 701	0 / 0	1 / 50 DAY 365	0 / 0	0/50	

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OBSERVATION	Control		12.5 ppm		25 ppm		50 ppm	
	CURRENT*	TOTAL+	CURRENT	TOTAL	CURRENT	TOTAL	CURRENT	TOTAL
	Ulcer/Abscess Torso/Ventral	0 / 0	1 / 50 DAY 645	0 / 0	2 / 50 DAY 561	0 / 0	2 / 50 DAY 421	0 / 0

\*\*\*END OF MALE DATA\*\*\*

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 Lab: BNW

SEX: FEMALE		WEEK: 105							
OBSERVATION	Control		12.5 ppm		25 ppm		50 ppm		
	CURRENT*	TOTAL+	CURRENT	TOTAL	CURRENT	TOTAL	CURRENT	TOTAL	
Abnormal Breathing	0 / 0	4 / 50 DAY 253	0 / 0	2 / 50 DAY 393	0 / 0	1 / 50 DAY 645	0 / 0	14 / 50 DAY 29	
Eye Abnormality	0 / 0	0/50	0 / 0	2 / 50 DAY 617	0 / 0	21 / 50 DAY 477	0 / 0	37 / 50 DAY 421	
Head Tilt	0 / 0	1 / 50 DAY 561	0 / 0	1 / 50 DAY 715	0 / 0	0/50	0 / 0	0/50	
Hyperactivity	0 / 0	0/50	0 / 0	1 / 50 DAY 421	0 / 0	0/50	0 / 0	0/50	
Impaired Gait	0 / 0	1 / 50 DAY 645	0 / 0	0/50	0 / 0	0/50	0 / 0	0/50	
Lethargic	0 / 0	2 / 50 DAY 253	0 / 0	2 / 50 DAY 715	0 / 0	5 / 50 DAY 505	0 / 0	1 / 50 DAY 533	
Mass Appendage	0 / 0	0/50	0 / 0	1 / 50 DAY 225	0 / 0	0/50	0 / 0	1 / 50 DAY 561	
Mass Head	0 / 0	0/50	0 / 0	0/50	0 / 0	0/50	0 / 0	1 / 50 DAY 701	

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OBSERVATION	Control		12.5 ppm		25 ppm		50 ppm		
	CURRENT*	TOTAL+	CURRENT	TOTAL	CURRENT	TOTAL	CURRENT	TOTAL	
<b>Mass</b> Torso/Dorsal	0 / 0	0/50	0 / 0	1 / 50 DAY 673	0 / 0	1 / 50 DAY 589	0 / 0	0/50	
<b>Mass</b> Torso/Lateral	0 / 0	5 / 50 DAY 561	0 / 0	6 / 50 DAY 645	0 / 0	4 / 50 DAY 659	0 / 0	1 / 50 DAY 421	
<b>Mass</b> Torso/Ventral	0 / 0	6 / 50 DAY 449	0 / 0	7 / 50 DAY 505	0 / 0	8 / 50 DAY 365	0 / 0	8 / 50 DAY 421	
<b>Nasal/Eye Discharge</b>	0 / 0	5 / 50 DAY 253	0 / 0	3 / 50 DAY 337	0 / 0	3 / 50 DAY 533	0 / 0	3 / 50 DAY 533	
<b>Ruffled Fur</b>	0 / 0	2 / 50 DAY 561	0 / 0	5 / 50 DAY 659	0 / 0	3 / 50 DAY 449	0 / 0	1 / 50 DAY 715	
<b>Thin</b>	0 / 0	13 / 50 DAY 253	0 / 0	15 / 50 DAY 365	0 / 0	15 / 50 DAY 393	0 / 0	12 / 50 DAY 533	
<b>Tonic Seizures</b>	0 / 0	0/50	0 / 0	1 / 50 DAY 393	0 / 0	0/50	0 / 0	0/50	
<b>Ulcer/Abscess</b> Appendage	0 / 0	0/50	0 / 0	0/50	0 / 0	0/50	0 / 0	1 / 50 DAY 561	

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OBSERVATION	Control		12.5 ppm		25 ppm		50 ppm		
	CURRENT*	TOTAL+	CURRENT	TOTAL	CURRENT	TOTAL	CURRENT	TOTAL	
Ulcer/Abscess Head	0 / 0	1 / 50 DAY 505	0 / 0	0 / 50	0 / 0	1 / 50 DAY 421	0 / 0	0 / 50	
Ulcer/Abscess Torso/Lateral	0 / 0	0 / 50	0 / 0	1 / 50 DAY 687	0 / 0	0 / 50	0 / 0	0 / 50	
Ulcer/Abscess Torso/Ventral	0 / 0	0 / 50	0 / 0	0 / 50	0 / 0	0 / 50	0 / 0	1 / 50 DAY 561	

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

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