

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY

Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

C Number:	R92025B
Cage Range:	All
Date Range:	All
Reasons For Removal:	All
Removal Date Range:	All
Treatment Groups:	All
Study Gender:	Both

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F0 Male

Phase	Litter ID	Observation	Treatment Groups (ppm)					
			0	750	2500	5000	0 NM	2500 NM
SD		Convulsion	0 / 23	0 / 23	0 / 23	1 / 23 SD 62	0 / 22	0 / 19
SD		Eye Discharge Bilateral; Brown	0 / 23	0 / 23	3 / 23 SD 11	1 / 23 SD 106	0 / 22	0 / 19
SD		Eye Discharge Bilateral; Clear	0 / 23	0 / 23	1 / 23 SD 76	0 / 23	0 / 22	0 / 19
SD		Eye Discharge Bilateral; Red	0 / 23	0 / 23	2 / 23 SD 40	1 / 23 SD 80	0 / 22	0 / 19
SD		Eye Discharge Left; Black	0 / 23	1 / 23 SD 31	0 / 23	0 / 23	0 / 22	0 / 19
SD		Eye Discharge Left; Brown	0 / 23	3 / 23 SD 31	1 / 23 SD 20	2 / 23 SD 76	0 / 22	0 / 19
SD		Eye Discharge Left; Clear	0 / 23	0 / 23	1 / 23 SD 174	1 / 23 SD 24	0 / 22	0 / 19
SD		Eye Discharge Left; Red	0 / 23	0 / 23	1 / 23 SD 78	0 / 23	0 / 22	0 / 19
SD		Eye Discharge Right; Brown	0 / 23	0 / 23	2 / 23 SD 43	3 / 23 SD 11	0 / 22	0 / 19
SD		Eye Discharge Right; Red	0 / 23	0 / 23	0 / 23	1 / 23 SD 92	0 / 22	0 / 19

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F0 Male

Phase	Litter ID	Observation	Treatment Groups (ppm)					
			0	750	2500	5000	0 NM	2500 NM
SD		Eye Squinting Left	0 / 23	0 / 23	1 / 23 SD 13	0 / 23	0 / 22	0 / 19
SD		Nasal Discharge Brown	0 / 23	0 / 23	0 / 23	1 / 23 SD 52	0 / 22	0 / 19
SD		Nasal Discharge Red	1 / 23 SD 30	0 / 23	1 / 23 SD 60	0 / 23	0 / 22	0 / 19
SD		Retropulsion	0 / 23	0 / 23	0 / 23	1 / 23 SD 31	0 / 22	0 / 19
SD		Salivation Mild	0 / 23	0 / 23	0 / 23	1 / 23 SD 62	0 / 22	0 / 19
SD		Salivation Moderate	0 / 23	0 / 23	0 / 23	1 / 23 SD 63	0 / 22	0 / 19
SD		Scab(s) Right Axillary	0 / 23	0 / 23	0 / 23	1 / 23 SD 65	0 / 22	0 / 19
SD		Sore(s) On Body Face	0 / 23	0 / 23	1 / 23 SD 15	1 / 23 SD 127	0 / 22	0 / 19
SD		Sore(s) On Body Nose/Snout	0 / 23	0 / 23	1 / 23 SD 105	0 / 23	0 / 22	0 / 19
SD		Sore(s) On Body Right Axillary	0 / 23	0 / 23	0 / 23	1 / 23 SD 63	0 / 22	0 / 19

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F0 Male

Phase	Litter ID	Observation	Treatment Groups (ppm)					
			0	750	2500	5000	0 NM	2500 NM
SD		Sore(s) On Body Right Hind Paw	1 / 23 SD 152	0 / 23	0 / 23	0 / 23	0 / 22	0 / 19
SD		Sore(s) On Body Tail Tip	0 / 23	1 / 23 SD 156	0 / 23	0 / 23	0 / 22	0 / 19
SD		Staining Left Eye; Brown	0 / 23	0 / 23	2 / 23 SD 13	0 / 23	0 / 22	0 / 19
SD		Staining Right Eye; Brown	0 / 23	0 / 23	0 / 23	1 / 23 SD 13	0 / 22	0 / 19
SD		Swelling Face	0 / 23	0 / 23	1 / 23 SD 98	0 / 23	0 / 22	0 / 19
SD		Tail Damaged	0 / 23	0 / 23	0 / 23	1 / 23 SD 50	0 / 22	0 / 19

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F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
GD	A	Abnormal Posture	0 / 21	0 / 21	0 / 17	1 / 7 GD 23			
GD	A	Cold To Touch	0 / 21	0 / 21	0 / 17	1 / 7 GD 23			
GD	A	Dystocia	0 / 21	0 / 21	0 / 17	1 / 7 GD 23			
GD	A	Fur Stained Abdomen; Yellow	0 / 21	0 / 21	0 / 17	1 / 7 GD 23			
GD	A	Hypoactive	0 / 21	0 / 21	0 / 17	1 / 7 GD 23			
GD	A	Nasal Discharge Red	0 / 21	0 / 21	0 / 17	1 / 7 GD 19			
GD	A	Pale	0 / 21	0 / 21	0 / 17	1 / 7 GD 23			
GD	A	Piloerection	0 / 21	0 / 21	0 / 17	1 / 7 GD 23			
GD	A	Staining Nose/Snout; Red	0 / 21	0 / 21	1 / 17 GD 23	0 / 7			
GD	A	Vaginal Discharge Brown	1 / 21 GD 13	0 / 21	0 / 17	0 / 7			

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F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
GD	A	Vaginal Thread	0 / 21	1 / 21 GD 0	0 / 17	0 / 7			
LD	A	Abnormal Gait	0 / 22	0 / 22	1 / 17 LD 1	1 / 6 LD 2			
LD	A	Abnormal Posture	0 / 22	0 / 22	1 / 17 LD 1	0 / 6			
LD	A	Alopecia Right Fore Paw	0 / 22	1 / 22 LD 2	0 / 17	0 / 6			
LD	A	Alopecia Right Forelimb	0 / 22	1 / 22 LD 3	0 / 17	0 / 6			
LD	A	Delivering	0 / 22	1 / 22 LD 0	1 / 17 LD 0	0 / 6			
LD	A	Eye Squinting Bilateral	0 / 22	0 / 22	1 / 17 LD 1	0 / 6			
LD	A	Hunched	0 / 22	0 / 22	1 / 17 LD 1	1 / 6 LD 2			
LD	A	Hypoactive	0 / 22	0 / 22	1 / 17 LD 1	0 / 6			
LD	A	Nasal Discharge Red	0 / 22	0 / 22	0 / 17	1 / 6 LD 0			

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Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
LD	A	Pale	0 / 22	0 / 22	1 / 17 LD 1	1 / 6 LD 0			
LD	A	Piloerection	0 / 22	0 / 22	1 / 17 LD 1	0 / 6			
LD	A	Respiration Labored	0 / 22	0 / 22	1 / 17 LD 1	0 / 6			
LD	A	Rough Coat	0 / 22	0 / 22	0 / 17	2 / 6 LD 0			
LD	A	Staining Nose/Snout; Brown	0 / 22	0 / 22	0 / 17	1 / 6 LD 0			
LD	A	Staining Nose/Snout; Red	0 / 22	0 / 22	1 / 17 LD 0	1 / 6 LD 1			
LD	A	Vaginal Discharge Brown	0 / 22	0 / 22	0 / 17	1 / 6 LD 1			
LD	A	Vaginal Discharge Red	0 / 22	0 / 22	0 / 17	1 / 6 LD 0			
LD	A	Vocalization	0 / 22	0 / 22	0 / 17	1 / 6 LD 2			
GD	B	Alopecia Back	0 / 18	0 / 20	1 / 16 GD 9	0 / 9			

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F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
GD	B	Alopecia Left Fore Paw	0 / 18	1 / 20 GD 0	0 / 16	0 / 9			
GD	B	Alopecia Left Forelimb	0 / 18	1 / 20 GD 0	0 / 16	0 / 9			
GD	B	Alopecia Right Fore Paw	0 / 18	1 / 20 GD 0	0 / 16	0 / 9			
GD	B	Alopecia Right Forelimb	0 / 18	1 / 20 GD 0	1 / 16 GD 15	0 / 9			
GD	B	Cold To Touch	0 / 18	0 / 20	0 / 16	1 / 9 GD 24			
GD	B	Convulsion	0 / 18	0 / 20	0 / 16	2 / 9 GD 7			
GD	B	Delivering	0 / 18	0 / 20	0 / 16	1 / 9 GD 23			
GD	B	Eye Discharge Bilateral; Brown	0 / 18	0 / 20	1 / 16 GD 19	0 / 9			
GD	B	Fur Stained Abdomen; Yellow	0 / 18	0 / 20	0 / 16	1 / 9 GD 24			
GD	B	Hyperactive	0 / 18	0 / 20	0 / 16	1 / 9 GD 9			

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F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
GD	B	Mass Chest	0 / 18	1 / 20 GD 19	0 / 16	0 / 9			
GD	B	Nasal Discharge Brown	0 / 18	0 / 20	0 / 16	2 / 9 GD 22			
GD	B	Nasal Discharge Red	1 / 18 GD 4	0 / 20	0 / 16	1 / 9 GD 7			
GD	B	Pale	0 / 18	0 / 20	0 / 16	2 / 9 GD 24			
GD	B	Piloerection	0 / 18	0 / 20	0 / 16	4 / 9 GD 18			
GD	B	Vaginal Discharge Brown	0 / 18	1 / 20 GD 15	0 / 16	1 / 9 GD 24			
GD	B	Vaginal Discharge Red	0 / 18	1 / 20 GD 15	0 / 16	1 / 9 GD 23			
LD	B	Abnormal Posture	0 / 19	0 / 23	0 / 17	1 / 6 LD 0			
LD	B	Alopecia Chest	0 / 19	0 / 23	1 / 17 LD 4	0 / 6			
LD	B	Alopecia Left Forelimb	0 / 19	1 / 23 LD 0	0 / 17	0 / 6			

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Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
LD	B	Alopecia Right Fore Paw	0 / 19	1 / 23 LD 0	0 / 17	0 / 6			
LD	B	Alopecia Right Forelimb	0 / 19	1 / 23 LD 0	2 / 17 LD 0	0 / 6			
LD	B	Cold To Touch	0 / 19	0 / 23	0 / 17	2 / 6 LD 0			
LD	B	Delivering	1 / 19 LD 0	0 / 23	1 / 17 LD 0	0 / 6			
LD	B	Dystocia	0 / 19	0 / 23	0 / 17	1 / 6 LD 0			
LD	B	Eye Discharge Left; Brown	1 / 19 LD 4	0 / 23	0 / 17	0 / 6			
LD	B	Eye Discharge Right; Black	0 / 19	0 / 23	1 / 17 LD 4	0 / 6			
LD	B	Eye Discharge Right; Brown	0 / 19	0 / 23	1 / 17 LD 2	0 / 6			
LD	B	Hypoactive	0 / 19	0 / 23	0 / 17	2 / 6 LD 0			
LD	B	Lethargic	0 / 19	0 / 23	0 / 17	1 / 6 LD 0			

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F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
LD	B	Loss of Limb Function Left Hindlimb	0 / 19	0 / 23	0 / 17	1 / 6 LD 0			
LD	B	Loss of Limb Function Right Hindlimb	0 / 19	0 / 23	0 / 17	1 / 6 LD 0			
LD	B	Mass Chest	0 / 19	1 / 23 LD 0	0 / 17	0 / 6			
LD	B	Nasal Discharge Brown	0 / 19	0 / 23	0 / 17	1 / 6 LD 0			
LD	B	Pale	0 / 19	0 / 23	0 / 17	2 / 6 LD 0			
LD	B	Piloerection	0 / 19	0 / 23	0 / 17	1 / 6 LD 0			
LD	B	Respiration Labored	0 / 19	0 / 23	0 / 17	1 / 6 LD 0			
LD	B	Vaginal Discharge Red	0 / 19	0 / 23	0 / 17	1 / 6 LD 0			
GD	C	Alopecia Chest	0 / 17	0 / 20	1 / 16 GD 0				
GD	C	Alopecia Left Forelimb	0 / 17	0 / 20	2 / 16 GD 0				

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F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
GD	C	Alopecia Right Forelimb	0 / 17	0 / 20	2 / 16				GD 0
GD	C	Alopecia Right Hindlimb	0 / 17	0 / 20	1 / 16				GD 20
GD	C	Cold To Touch	0 / 17	0 / 20	1 / 16				GD 23
GD	C	Lethargic	0 / 17	0 / 20	1 / 16				GD 23
GD	C	Mass Left Axillary	0 / 17	1 / 20 GD 21	0 / 16				
GD	C	Mass Right Axillary	0 / 17	1 / 20 GD 21	0 / 16				
GD	C	Mass Right Inguinal	0 / 17	1 / 20 GD 21	0 / 16				
GD	C	Pale	0 / 17	0 / 20	1 / 16				GD 23
GD	C	Piloerection	0 / 17	0 / 20	2 / 16				GD 22
GD	C	Scab(s) Right Forelimb	0 / 17	0 / 20	1 / 16				GD 16

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F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)					
			0	750	2500	5000	0 NF	2500 NF
GD	C	Scab(s) Tail	1 / 17 GD 21	0 / 20	0 / 16			
GD	C	Sore(s) On Body Tail	1 / 17 GD 14	0 / 20	0 / 16			
GD	C	Tail Damaged	1 / 17 GD 0	0 / 20	0 / 16			
GD	C	Vaginal Discharge Red	1 / 17 GD 23	0 / 20	0 / 16			
LD	C	Alopecia Chest	0 / 19	0 / 22	1 / 16 LD 0			
LD	C	Alopecia Left Fore Paw	0 / 19	0 / 22	1 / 16 LD 14			
LD	C	Alopecia Left Forelimb	0 / 19	1 / 22 LD 0	1 / 16 LD 0			
LD	C	Alopecia Right Fore Paw	0 / 19	0 / 22	1 / 16 LD 14			
LD	C	Alopecia Right Forelimb	0 / 19	1 / 22 LD 0	1 / 16 LD 0			
LD	C	Alopecia Right Hindlimb	0 / 19	0 / 22	1 / 16 LD 0			

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F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)										
			0	750	2500	5000	0 NF	2500 NF	5000 NF				
LD	C	Convulsion	0 / 19	0 / 22	2 / 16								
					LD 1								
LD	C	Delivering	1 / 19	3 / 22	0 / 16								
			LD 0	LD 0									
LD	C	Eye Discharge Left; Black	0 / 19	1 / 22	0 / 16								
				LD 5									
LD	C	Eye Discharge Right; Red	0 / 19	0 / 22	1 / 16								
					LD 17								
LD	C	Hyperactive	0 / 19	0 / 22	2 / 16								
					LD 1								
LD	C	Mass Left Axillary	0 / 19	1 / 22	0 / 16								
				LD 0									
LD	C	Mass Right Axillary	0 / 19	1 / 22	0 / 16								
				LD 0									
LD	C	Mass Right Inguinal	0 / 19	1 / 22	1 / 16								
				LD 0	LD 0								
LD	C	Nasal Discharge Red	0 / 19	0 / 22	1 / 16								
					LD 11								
LD	C	Piloerection	0 / 19	0 / 22	1 / 16								
					LD 13								

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Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
LD	C	Salivation Mild	0 / 19	0 / 22	1 / 16 LD 11				
LD	C	Salivation Moderate	0 / 19	0 / 22	1 / 16 LD 13				
LD	C	Scab(s) Nose/Snout	0 / 19	1 / 22 LD 1	0 / 16				
LD	C	Scab(s) Tail	1 / 19 LD 0	0 / 22	0 / 16				
LD	C	Shaking	0 / 19	0 / 22	1 / 16 LD 13				
LD	C	Sore(s) On Body Right Fore Paw	0 / 19	0 / 22	1 / 16 LD 14				
LD	C	Staining Nose/Snout; Red	0 / 19	0 / 22	1 / 16 LD 5				
LD	C	Tail Damaged	0 / 19	0 / 22	1 / 16 LD 23				
LD	C	Vaginal Discharge Brown	0 / 19	0 / 22	1 / 16 LD 1				
LD	C	Vaginal Discharge Clear	0 / 19	1 / 22 LD 0	0 / 16				

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Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
LD	C	Vaginal Discharge Red	0 / 19	0 / 22	2 / 16 LD 0				
GD	D	Piloerection	0 / 11		1 / 9 GD 21				
GD	D	Tail Damaged	0 / 11		1 / 9 GD 21				
GD	D	Vaginal Discharge Clear	0 / 11		1 / 9 GD 21				
LD	D	Alopecia Chest	0 / 12		1 / 10 LD 0				
LD	D	Alopecia Left Forelimb	0 / 12		1 / 10 LD 0				
LD	D	Alopecia Right Forelimb	0 / 12		1 / 10 LD 0				
LD	D	Ataxia Mild	0 / 12		1 / 10 LD 0				
LD	D	Convulsion	0 / 12		1 / 10 LD 0				
LD	D	Piloerection	0 / 12		2 / 10 LD 0				

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Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
LD	D	Tail Damaged	0 / 12		1 / 10 LD 0				
LD	D	Vaginal Discharge Brown	0 / 12		1 / 10 LD 0				
LD	D	Vaginal Discharge Red	1 / 12 LD 0		0 / 10				
GD	E	Eye Discharge Right; Red					0 / 16	1 / 15 GD 18	0 / 6
LD	E	Eye Discharge Left; Black					1 / 16 LD 1	0 / 15	0 / 6
LD	E	Eye Discharge Right; Black					0 / 16	0 / 15	1 / 6 LD 1
SD		Abnormal Gait	1 / 23 SD 87	0 / 23	0 / 23	1 / 23 SD 69	0 / 23	0 / 20	0 / 21
SD		Alopecia Chest	0 / 23	0 / 23	1 / 23 SD 88	0 / 23	0 / 23	0 / 20	0 / 21
SD		Alopecia Left Fore Paw	0 / 23	1 / 23 SD 53	2 / 23 SD 147	0 / 23	0 / 23	0 / 20	0 / 21
SD		Alopecia Left Forelimb	0 / 23	1 / 23 SD 52	2 / 23 SD 74	0 / 23	0 / 23	0 / 20	0 / 21

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Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
SD		Alopecia Right Fore Paw	0 / 23	1 / 23 SD 43	2 / 23 SD 74	0 / 23	0 / 23	0 / 20	0 / 21
SD		Alopecia Right Forelimb	0 / 23	1 / 23 SD 43	3 / 23 SD 88	0 / 23	0 / 23	0 / 20	0 / 21
SD		Ataxia Mild	0 / 23	0 / 23	0 / 23	1 / 23 SD 126	0 / 23	0 / 20	0 / 21
SD		Convulsion	1 / 23 SD 189	0 / 23	0 / 23	8 / 23 SD 29	0 / 23	0 / 20	0 / 21
SD		Eye Discharge Bilateral; Brown	0 / 23	0 / 23	1 / 23 SD 56	1 / 23 SD 122	0 / 23	0 / 20	0 / 21
SD		Eye Discharge Bilateral; Red	1 / 23 SD 87	0 / 23	2 / 23 SD 45	2 / 23 SD 34	0 / 23	0 / 20	0 / 21
SD		Eye Discharge Left; Brown	1 / 23 SD 185	0 / 23	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Eye Discharge Left; Red	0 / 23	0 / 23	1 / 23 SD 44	1 / 23 SD 91	0 / 23	0 / 20	0 / 21
SD		Eye Discharge Right; Brown	0 / 23	1 / 23 SD 171	0 / 23	2 / 23 SD 58	0 / 23	0 / 20	0 / 21
SD		Eye Squinting Bilateral	0 / 23	0 / 23	1 / 23 SD 10	2 / 23 SD 69	0 / 23	0 / 20	0 / 21

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Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
SD		Feces Soft	1 / 23 SD 98	0 / 23	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Head Shaking	0 / 23	0 / 23	0 / 23	1 / 23 SD 113	0 / 23	0 / 20	0 / 21
SD		Head Tilt Left	1 / 23 SD 129	0 / 23	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Hunched	0 / 23	0 / 23	0 / 23	2 / 23 SD 69	0 / 23	0 / 20	0 / 21
SD		Hypoactive	0 / 23	0 / 23	0 / 23	1 / 23 SD 69	0 / 23	0 / 20	0 / 21
SD		Lethargic	1 / 23 SD 87	0 / 23	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Loss of Limb Function Right Forelimb	0 / 23	0 / 23	1 / 23 SD 10	0 / 23	0 / 23	0 / 20	0 / 21
SD		Mass Chest	0 / 23	1 / 23 SD 91	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Mass Face	0 / 23	1 / 23 SD 198	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Mass Left Axillary	1 / 23 SD 87	0 / 23	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
SD		Mass Right Inguinal	1 / 23 SD 87	1 / 23 SD 148	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Nasal Discharge Brown	1 / 23 SD 87	0 / 23	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Nasal Discharge Red	1 / 23 SD 129	0 / 23	0 / 23	2 / 23 SD 69	0 / 23	0 / 20	0 / 21
SD		Pale	0 / 23	0 / 23	0 / 23	1 / 23 SD 84	0 / 23	0 / 20	0 / 21
SD		Piloerection	1 / 23 SD 87	0 / 23	1 / 23 SD 212	2 / 23 SD 126	0 / 23	0 / 20	0 / 21
SD		Postural instability-rearing Mild	0 / 23	0 / 23	0 / 23	1 / 23 SD 69	0 / 23	0 / 20	0 / 21
SD		Rearing	1 / 23 SD 189	0 / 23	0 / 23	4 / 23 SD 113	0 / 23	0 / 20	0 / 21
SD		Respiration Labored	0 / 23	0 / 23	0 / 23	1 / 23 SD 69	0 / 23	0 / 20	0 / 21
SD		Salivation Mild	0 / 23	0 / 23	0 / 23	4 / 23 SD 40	0 / 23	0 / 20	0 / 21
SD		Salivation Moderate	0 / 23	0 / 23	0 / 23	4 / 23 SD 62	0 / 23	0 / 20	0 / 21

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
SD		Salivation Severe	1 / 23 SD 189	0 / 23	0 / 23	3 / 23 SD 29	0 / 23	0 / 20	0 / 21
SD		Scab(s) Tail	1 / 23 SD 189	1 / 23 SD 193	0 / 23	1 / 23 SD 199	0 / 23	0 / 20	0 / 21
SD		Sore(s) On Body Face	0 / 23	1 / 23 SD 205	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Sore(s) On Body Nose/Snout	0 / 23	0 / 23	1 / 23 SD 10	0 / 23	0 / 23	0 / 20	0 / 21
SD		Sore(s) On Body Right Fore Paw	0 / 23	0 / 23	1 / 23 SD 10	0 / 23	0 / 23	0 / 20	0 / 21
SD		Sore(s) On Body Tail	1 / 23 SD 178	1 / 23 SD 182	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Staining Nose/Snout; Red	1 / 23 SD 134	0 / 23	1 / 23 SD 47	0 / 23	0 / 23	0 / 20	0 / 21
SD		Staining Right Eye; Brown	0 / 23	0 / 23	0 / 23	0 / 23	1 / 23 SD 7	0 / 20	0 / 21
SD		Swelling Left Inguinal	1 / 23 SD 57	0 / 23	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21
SD		Swelling Right Inguinal	1 / 23 SD 57	0 / 23	0 / 23	0 / 23	0 / 23	0 / 20	0 / 21

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F0 Female

Phase	Litter ID	Observation	Treatment Groups (ppm)						
			0	750	2500	5000	0 NF	2500 NF	5000 NF
SD		Tail Damaged	2 / 23 SD 100	0 / 23	1 / 23 SD 149	0 / 23	0 / 23	0 / 20	0 / 21
SD		Vaginal Discharge Red	0 / 23	1 / 23 SD 111	0 / 23	1 / 23 SD 83	0 / 23	0 / 20	0 / 21
SD		Vaginal Thread	0 / 23	1 / 23 SD 15	0 / 23	1 / 23 SD 15	1 / 23 SD 4	0 / 20	1 / 21 SD 4

Experiment Number: R92025B

Test Type: RACB

Route: Dosing in Feed

Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY

Test Compound: 4-Methylimidazole

CAS Number: 822-36-6

Date Report Requested: 08/25/2017

Time Report Requested: 11:18:21

Lab: RTI

F1 Male : All F1 Males

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Deformed Left Hind Paw	1 / 90 PND 50	0 / 100	0 / 60
PND		Deformed Right Hind Paw	4 / 90 PND 46	0 / 100	0 / 60
PND		Eye Discharge Bilateral; Brown	0 / 90	0 / 100	1 / 60 PND 41
PND		Eye Discharge Bilateral; Red	0 / 90	0 / 100	1 / 60 PND 41
PND		Eye Discharge Left; Black	0 / 90	0 / 100	3 / 60 PND 56
PND		Eye Discharge Left; Brown	0 / 90	0 / 100	2 / 60 PND 56
PND		Eye Discharge Left; Clear	0 / 90	0 / 100	1 / 60 PND 87
PND		Eye Discharge Left; Red	0 / 90	1 / 100 PND 49	2 / 60 PND 49
PND		Eye Discharge Right; Brown	1 / 90 PND 67	1 / 100 PND 67	0 / 60
PND		Nasal Discharge Red	1 / 90 PND 42	0 / 100	1 / 60 PND 41

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Male : All F1 Males

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Scab(s) Left Eye	0 / 90	1 / 100 PND 40	0 / 60
PND		Scab(s) Tail	0 / 90	1 / 100 PND 81	0 / 60
PND		Sore(s) On Body Face	0 / 90	0 / 100	1 / 60 PND 77
PND		Sore(s) On Body Tail	1 / 90 PND 63	1 / 100 PND 70	0 / 60
PND		Tail Damaged	1 / 90 PND 28	2 / 100 PND 28	1 / 60 PND 28
PND		Tail Kinked	2 / 90 PND 42	1 / 100 PND 54	3 / 60 PND 39
PND		Tail Tip Missing	1 / 90 PND 37	0 / 100	1 / 60 PND 35

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : All F1 Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Alopecia Abdomen	1 / 96 PND 30	0 / 111	0 / 67
PND		Alopecia Left Forelimb	0 / 96	1 / 111 PND 56	0 / 67
PND		Alopecia Multiple Sites (>2)	1 / 96 PND 28	0 / 111	0 / 67
PND		Alopecia Right Forelimb	0 / 96	1 / 111 PND 56	0 / 67
PND		Convulsion	0 / 96	0 / 111	1 / 67 PND 77
PND		Deformed Left Hind Paw	5 / 96 PND 46	2 / 111 PND 44	0 / 67
PND		Deformed Right Hind Paw	10 / 96 PND 42	2 / 111 PND 45	2 / 67 PND 49
PND		Eye Discharge Left; Black	0 / 96	1 / 111 PND 74	0 / 67
PND		Scab(s) Nose/Snout	0 / 96	1 / 111 PND 61	0 / 67
PND		Sore(s) On Body Nose/Snout	0 / 96	1 / 111 PND 60	0 / 67

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : All F1 Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Swelling Nose/Snout	0 / 96	1 / 111 PND 59	0 / 67
PND		Tail Damaged	3 / 96 PND 28	0 / 111	0 / 67
PND		Tail Tip Missing	2 / 96 PND 31	0 / 111	0 / 67
PND		Vaginal Thread	11 / 96 PND 32	14 / 111 PND 34	12 / 67 PND 35

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Male : F1 Parental Males

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Alopecia Head	0 / 40	0 / 44	1 / 40 PND 94
PND		Alopecia Right Forelimb	0 / 40	0 / 44	1 / 40 PND 223
PND		Deformed Right Hind Paw	1 / 40 PND 92	0 / 44	0 / 40
PND		Eye Discharge Bilateral; Brown	0 / 40	0 / 44	2 / 40 PND 126
PND		Eye Discharge Bilateral; Red	0 / 40	0 / 44	2 / 40 PND 129
PND		Eye Discharge Left; Black	0 / 40	0 / 44	1 / 40 PND 138
PND		Eye Discharge Left; Brown	2 / 40 PND 136	1 / 44 PND 105	5 / 40 PND 95
PND		Eye Discharge Left; Clear	0 / 40	0 / 44	2 / 40 PND 92
PND		Eye Discharge Left; Red	0 / 40	0 / 44	3 / 40 PND 92
PND		Eye Discharge Right; Black	0 / 40	0 / 44	1 / 40 PND 168

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Male : F1 Parental Males

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Eye Discharge Right; Brown	2 / 40 PND 98	3 / 44 PND 98	0 / 40
PND		Eye Discharge Right; Clear	0 / 40	0 / 44	1 / 40 PND 172
PND		Eye Discharge Right; Red	0 / 40	1 / 44 PND 136	1 / 40 PND 171
PND		Lethargic	0 / 40	0 / 44	1 / 40 PND 188
PND		Mass Abdomen	0 / 40	0 / 44	1 / 40 PND 175
PND		Mass Back	0 / 40	1 / 44 PND 203	0 / 40
PND		Mass Face	0 / 40	0 / 44	1 / 40 PND 122
PND		Nasal Discharge Brown	0 / 40	1 / 44 PND 169	0 / 40
PND		Nasal Discharge Red	0 / 40	0 / 44	2 / 40 PND 105
PND		Scab(s) Face	0 / 40	1 / 44 PND 115	0 / 40

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Male : F1 Parental Males

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Scab(s) Tail	0 / 40	1 / 44 PND 92	0 / 40
PND		Sore(s) On Body Face	1 / 40 PND 127	1 / 44 PND 113	1 / 40 PND 92
PND		Sore(s) On Body Head	1 / 40 PND 135	0 / 44	0 / 40
PND		Sore(s) On Body Left Eye	0 / 40	0 / 44	1 / 40 PND 138
PND		Sore(s) On Body Nose/Snout	0 / 40	0 / 44	1 / 40 PND 217
PND		Sore(s) On Body Right Eye	0 / 40	0 / 44	1 / 40 PND 168
PND		Staining Left Eye; Brown	0 / 40	0 / 44	1 / 40 PND 119
PND		Tail Damaged	0 / 40	1 / 44 PND 128	0 / 40
PND		Tail Tip Missing	0 / 40	1 / 44 PND 140	0 / 40

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
GD	A	Alopecia Back	0 / 33	0 / 33	1 / 32 GD 14
GD	A	Alopecia Left Fore Paw	0 / 33	1 / 33 GD 14	1 / 32 GD 0
GD	A	Alopecia Left Forelimb	1 / 33 GD 14	1 / 33 GD 18	0 / 32
GD	A	Alopecia Neck	1 / 33 GD 0	0 / 33	0 / 32
GD	A	Alopecia Right Fore Paw	0 / 33	1 / 33 GD 14	0 / 32
GD	A	Alopecia Right Forelimb	1 / 33 GD 18	1 / 33 GD 18	0 / 32
GD	A	Biting Objects	0 / 33	0 / 33	1 / 32 GD 18
GD	A	Convulsion	0 / 33	0 / 33	4 / 32 GD 18
GD	A	Deformed Left Hind Paw	2 / 33 GD 0	0 / 33	0 / 32
GD	A	Deformed Right Hind Paw	6 / 33 GD 0	0 / 33	1 / 32 GD 0

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
GD	A	Delivering	0 / 33	2 / 33 GD 22	1 / 32 GD 22
GD	A	Dystocia	0 / 33	0 / 33	1 / 32 GD 23
GD	A	Eye Discharge Bilateral; Brown	0 / 33	1 / 33 GD 17	1 / 32 GD 22
GD	A	Eye Discharge Left; Black	0 / 33	1 / 33 GD 18	0 / 32
GD	A	Eye Discharge Left; Brown	0 / 33	1 / 33 GD 17	0 / 32
GD	A	Lethargic	0 / 33	0 / 33	1 / 32 GD 22
GD	A	Mass Right Axillary	0 / 33	0 / 33	1 / 32 GD 16
GD	A	Nasal Discharge Brown	0 / 33	0 / 33	1 / 32 GD 22
GD	A	Nasal Discharge Red	0 / 33	0 / 33	1 / 32 GD 21
GD	A	Piloerection	0 / 33	0 / 33	4 / 32 GD 18

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
GD	A	Rearing	0 / 33	0 / 33	4 / 32 GD 18
GD	A	Salivation Mild	0 / 33	0 / 33	1 / 32 GD 21
GD	A	Salivation Severe	0 / 33	0 / 33	2 / 32 GD 18
GD	A	Scab(s) Back	0 / 33	0 / 33	1 / 32 GD 7
GD	A	Sore(s) On Body Neck	0 / 33	1 / 33 GD 16	0 / 32
GD	A	Sore(s) On Body Nose/Snout	0 / 33	1 / 33 GD 12	0 / 32
GD	A	Vaginal Discharge Brown	0 / 33	2 / 33 GD 18	2 / 32 GD 22
GD	A	Vaginal Discharge Red	1 / 33 GD 23	0 / 33	1 / 32 GD 21
GD	A	Vaginal Thread	0 / 33	1 / 33 GD 0	0 / 32
GD	A	Vocalization	0 / 33	0 / 33	1 / 32 GD 23

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
LD	A	Alopecia Left Fore Paw	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Alopecia Left Forelimb	1 / 33 LD 0	1 / 34 LD 0	0 / 31
LD	A	Alopecia Neck	0 / 33	1 / 34 LD 1	0 / 31
LD	A	Alopecia Right Fore Paw	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Alopecia Right Forelimb	1 / 33 LD 0	1 / 34 LD 0	0 / 31
LD	A	Biting Objects	0 / 33	0 / 34	1 / 31 LD 1
LD	A	Cold To Touch	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Convulsion	0 / 33	0 / 34	2 / 31 LD 1
LD	A	Deformed Left Hind Paw	2 / 33 LD 0	0 / 34	0 / 31
LD	A	Deformed Right Hind Paw	6 / 33 LD 0	0 / 34	1 / 31 LD 0

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
LD	A	Delivering	0 / 33	0 / 34	1 / 31 LD 0
LD	A	Distended Abdomen	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Dystocia	0 / 33	0 / 34	1 / 31 LD 0
LD	A	Eye Discharge Left; Black	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Eye Discharge Left; Brown	0 / 33	1 / 34 LD 1	0 / 31
LD	A	Hypoactive	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Mass Right Axillary	0 / 33	0 / 34	1 / 31 LD 0
LD	A	Nasal Discharge Red	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Pale	0 / 33	2 / 34 LD 0	1 / 31 LD 0
LD	A	Prone	0 / 33	1 / 34 LD 0	0 / 31

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
LD	A	Rearing	0 / 33	0 / 34	2 / 31 LD 1
LD	A	Respiration Audible	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Respiration Labored	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Salivation Mild	0 / 33	0 / 34	1 / 31 LD 1
LD	A	Salivation Severe	0 / 33	0 / 34	1 / 31 LD 4
LD	A	Shaking	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Sore(s) On Body Neck	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Sore(s) On Body Nose/Snout	0 / 33	1 / 34 LD 0	0 / 31
LD	A	Staining Left Eye; Black	0 / 33	1 / 34 LD 1	0 / 31
LD	A	Vaginal Discharge Brown	0 / 33	2 / 34 LD 0	2 / 31 LD 0

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
LD	A	Vaginal Discharge Red	2 / 33 LD 0	2 / 34 LD 0	0 / 31
LD	A	Vocalization	0 / 33	0 / 34	1 / 31 LD 0
GD	B	Alopecia Chest	0 / 33	0 / 36	1 / 28 GD 14
GD	B	Alopecia Left Fore Paw	0 / 33	1 / 36 GD 0	0 / 28
GD	B	Alopecia Left Forelimb	0 / 33	1 / 36 GD 0	0 / 28
GD	B	Alopecia Neck	0 / 33	0 / 36	1 / 28 GD 14
GD	B	Alopecia Right Fore Paw	0 / 33	1 / 36 GD 0	0 / 28
GD	B	Alopecia Right Forelimb	0 / 33	1 / 36 GD 0	0 / 28
GD	B	Convulsion	0 / 33	0 / 36	1 / 28 GD 0
GD	B	Deformed Left Hind Paw	2 / 33 GD 0	0 / 36	0 / 28

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
GD	B	Deformed Right Hind Paw	7 / 33 GD 0	1 / 36 GD 0	0 / 28
GD	B	Eye Discharge Right; Brown	0 / 33	1 / 36 GD 21	0 / 28
GD	B	Eye Discharge Right; Red	0 / 33	0 / 36	1 / 28 GD 3
GD	B	Nasal Discharge Red	0 / 33	0 / 36	1 / 28 GD 20
GD	B	Postural instability-rearing Moderate	0 / 33	0 / 36	1 / 28 GD 15
GD	B	Rearing	0 / 33	0 / 36	1 / 28 GD 0
GD	B	Salivation Moderate	0 / 33	0 / 36	1 / 28 GD 13
GD	B	Scab(s) Chest	0 / 33	0 / 36	1 / 28 GD 14
GD	B	Scab(s) Neck	0 / 33	0 / 36	1 / 28 GD 14
GD	B	Vaginal Discharge Yellow	0 / 33	0 / 36	1 / 28 GD 21

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
GD	B	Vaginal Thread	1 / 33 GD 0	0 / 36	0 / 28
LD	B	Alopecia Chest	0 / 34	0 / 37	1 / 29 LD 0
LD	B	Alopecia Left Fore Paw	0 / 34	1 / 37 LD 0	0 / 29
LD	B	Alopecia Left Forelimb	0 / 34	1 / 37 LD 0	0 / 29
LD	B	Alopecia Neck	0 / 34	0 / 37	1 / 29 LD 0
LD	B	Alopecia Right Fore Paw	0 / 34	1 / 37 LD 0	0 / 29
LD	B	Alopecia Right Forelimb	0 / 34	1 / 37 LD 0	0 / 29
LD	B	Deformed Left Hind Paw	2 / 34 LD 0	0 / 37	0 / 29
LD	B	Deformed Right Hind Paw	7 / 34 LD 0	1 / 37 LD 0	0 / 29
LD	B	Delivering	0 / 34	0 / 37	1 / 29 LD 0

Experiment Number: R92025B

Test Type: RACB

Route: Dosing in Feed

Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY

Test Compound: 4-Methylimidazole

CAS Number: 822-36-6

Date Report Requested: 08/25/2017

Time Report Requested: 11:18:21

Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
LD	B	Mass Right Axillary	0 / 34	0 / 37	1 / 29 LD 0
LD	B	Vaginal Discharge Red	0 / 34	1 / 37 LD 0	0 / 29
LD	B	Vaginal Discharge Yellow	0 / 34	0 / 37	1 / 29 LD 0
GD	C	Alopecia Left Fore Paw	0 / 27	1 / 35 GD 0	0 / 25
GD	C	Alopecia Left Forelimb	0 / 27	1 / 35 GD 0	0 / 25
GD	C	Alopecia Right Fore Paw	0 / 27	1 / 35 GD 0	0 / 25
GD	C	Alopecia Right Forelimb	0 / 27	1 / 35 GD 0	0 / 25
GD	C	Deformed Left Hind Paw	2 / 27 GD 0	0 / 35	0 / 25
GD	C	Deformed Right Hind Paw	6 / 27 GD 0	1 / 35 GD 0	0 / 25
GD	C	Dystocia	0 / 27	0 / 35	1 / 25 GD 22

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
GD	C	Eye Discharge Bilateral; Brown	1 / 27 GD 5	0 / 35	1 / 25 GD 8
GD	C	Eye Discharge Bilateral; Red	0 / 27	1 / 35 GD 15	0 / 25
GD	C	Eye Discharge Right; Black	0 / 27	1 / 35 GD 13	0 / 25
GD	C	Eye Discharge Right; Brown	0 / 27	1 / 35 GD 8	0 / 25
GD	C	Hypoactive	0 / 27	0 / 35	1 / 25 GD 22
GD	C	Lethargic	0 / 27	0 / 35	1 / 25 GD 22
GD	C	Mass Left Axillary	1 / 27 GD 15	0 / 35	0 / 25
GD	C	Mass Neck	1 / 27 GD 0	0 / 35	0 / 25
GD	C	Nasal Discharge Brown	0 / 27	0 / 35	1 / 25 GD 22
GD	C	Nasal Discharge Red	0 / 27	0 / 35	1 / 25 GD 22

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
GD	C	Piloerection	0 / 27	0 / 35	3 / 25 GD 21
GD	C	Vaginal Discharge Brown	0 / 27	1 / 35 GD 20	0 / 25
LD	C	Alopecia Left Fore Paw	0 / 28	2 / 35 LD 0	1 / 23 LD 28
LD	C	Alopecia Left Forelimb	0 / 28	2 / 35 LD 0	1 / 23 LD 1
LD	C	Alopecia Right Fore Paw	0 / 28	1 / 35 LD 0	1 / 23 LD 28
LD	C	Alopecia Right Forelimb	0 / 28	2 / 35 LD 0	1 / 23 LD 1
LD	C	Biting Objects	0 / 28	0 / 35	1 / 23 LD 3
LD	C	Convulsion	0 / 28	1 / 35 LD 12	3 / 23 LD 3
LD	C	Deformed Left Hind Paw	2 / 28 LD 0	0 / 35	0 / 23
LD	C	Deformed Right Hind Paw	6 / 28 LD 0	1 / 35 LD 0	0 / 23

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
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Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
LD	C	Eye Discharge Bilateral; Red	0 / 28	1 / 35 LD 5	0 / 23
LD	C	Eye Discharge Right; Brown	0 / 28	1 / 35 LD 5	0 / 23
LD	C	Eye Squinting Bilateral	0 / 28	1 / 35 LD 4	0 / 23
LD	C	Mass Left Axillary	1 / 28 LD 0	0 / 35	0 / 23
LD	C	Mass Right Axillary	1 / 28 LD 1	0 / 35	0 / 23
LD	C	Nasal Discharge Red	1 / 28 LD 1	0 / 35	0 / 23
LD	C	Rearing	0 / 28	0 / 35	3 / 23 LD 3
PND		Abnormal Gait	0 / 40	1 / 44 PND 144	0 / 40
PND		Alopecia Chest	0 / 40	0 / 44	1 / 40 PND 182
PND		Alopecia Left Fore Paw	0 / 40	1 / 44 PND 138	0 / 40

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
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Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Alopecia Left Forelimb	1 / 40 PND 138	2 / 44 PND 138	0 / 40
PND		Alopecia Neck	1 / 40 PND 117	1 / 44 PND 138	1 / 40 PND 182
PND		Alopecia Right Fore Paw	0 / 40	1 / 44 PND 138	0 / 40
PND		Alopecia Right Forelimb	1 / 40 PND 138	2 / 44 PND 138	0 / 40
PND		Alopecia Right Inguinal	1 / 40 PND 141	0 / 44	0 / 40
PND		Alopecia Right Shoulder	1 / 40 PND 169	0 / 44	0 / 40
PND		Biting Objects	0 / 40	0 / 44	1 / 40 PND 98
PND		Cold To Touch	1 / 40 PND 223	0 / 44	0 / 40
PND		Convulsion	0 / 40	0 / 44	3 / 40 PND 98
PND		Deformed Left Hind Paw	2 / 40 PND 92	0 / 44	0 / 40

Experiment Number: R92025B
Test Type: RACB
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Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
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Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Deformed Right Hind Paw	9 / 40 PND 92	1 / 44 PND 92	1 / 40 PND 92
PND		Eye Discharge Bilateral; Brown	0 / 40	1 / 44 PND 174	1 / 40 PND 140
PND		Eye Discharge Left; Brown	0 / 40	2 / 44 PND 137	0 / 40
PND		Eye Discharge Right; Black	1 / 40 PND 140	0 / 44	0 / 40
PND		Eye Discharge Right; Brown	1 / 40 PND 205	1 / 44 PND 155	1 / 40 PND 238
PND		Eye Discharge Right; Clear	1 / 40 PND 146	0 / 44	0 / 40
PND		Hypoactive	1 / 40 PND 139	1 / 44 PND 144	1 / 40 PND 139
PND		Lethargic	1 / 40 PND 223	0 / 44	0 / 40
PND		Mass Abdomen	0 / 40	1 / 44 PND 144	1 / 40 PND 141
PND		Mass Neck	1 / 40 PND 203	0 / 44	0 / 40

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Mass Right Axillary	0 / 40	0 / 44	1 / 40 PND 138
PND		Mass Right Inguinal	1 / 40 PND 140	0 / 44	1 / 40 PND 143
PND		Nasal Discharge Brown	0 / 40	0 / 44	1 / 40 PND 140
PND		Nasal Discharge Red	0 / 40	1 / 44 PND 181	0 / 40
PND		Pale	1 / 40 PND 201	0 / 44	0 / 40
PND		Piloerection	1 / 40 PND 223	0 / 44	1 / 40 PND 139
PND		Rearing	0 / 40	0 / 44	3 / 40 PND 105
PND		Salivation Mild	0 / 40	0 / 44	2 / 40 PND 98
PND		Salivation Moderate	0 / 40	1 / 44 PND 174	0 / 40
PND		Scab(s) Face	0 / 40	1 / 44 PND 103	0 / 40

Experiment Number: R92025B
Test Type: RACB
Route: Dosing in Feed
Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
Time Report Requested: 11:18:21
Lab: RTI

F1 Female : F1 Parental Females

Phase	Litter ID	Observation	Treatment Groups (ppm)		
			0	750	2500
PND		Scab(s) Neck	1 / 40 PND 112	0 / 44	0 / 40
PND		Scab(s) Nose/Snout	0 / 40	0 / 44	1 / 40 PND 141
PND		Shaking	0 / 40	0 / 44	1 / 40 PND 105
PND		Sore(s) On Body Abdomen	0 / 40	0 / 44	1 / 40 PND 153
PND		Sore(s) On Body Face	0 / 40	1 / 44 PND 95	0 / 40
PND		Sore(s) On Body Nose/Snout	0 / 40	1 / 44 PND 138	0 / 40
PND		Swelling Right Inguinal	0 / 40	0 / 44	1 / 40 PND 140
PND		Tail Damaged	0 / 40	1 / 44 PND 241	0 / 40
PND		Urine Discolored	1 / 40 PND 223	0 / 44	0 / 40
PND		Vaginal Thread	1 / 40 PND 92	2 / 44 PND 92	1 / 40 PND 92

Experiment Number: R92025B
Test Type: RACB
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Species/Strain: Rat/Sprague-Dawley

I05: CLINICAL OBSERVATIONS SUMMARY
Test Compound: 4-Methylimidazole
CAS Number: 822-36-6

Date Report Requested: 08/25/2017
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Lab: RTI

LEGEND

Upper row displays cumulative number of animals with observation / total animals started on study

Lower row displays day of observation onset

SD – Study Phase; GD – Gestation Phase; LD – Lactation Phase; PND – Postnatal Phase, adults post-weaning

Females listed as SD were not pregnant

D Litter is crossover mating of dosed F0 Females with naive F0 Males

E Litter is crossover mating of F0 naive Females with dosed F0 Males (doses listed are for the doses of the F0 Males)

NM = Naive Males

NF = Naive Females

**** END OF REPORT ****