

Experiment Number: 117791

Test Type: **Genetic Toxicology - Bacterial
Mutagenicity**

G06: Ames Summary Data

Test Compound: **Piperazine**

CAS Number: **110-85-0**

Date Report Requested: **09/11/2018**

Time Report Requested: **20:35:45**

NTP Study Number:

117791

Study Result:

Negative

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Strain: TA100

Dose (ug/Plate)	Without S9	Without S9	With 10% Rat S9	With 10% Rat S9	With 10% Hamster S9
Vehicle Control ¹	70 ± 7.5	100 ± 4.2	84 ± 4.2	118 ± 11.2	78 ± 2.4
33.0	75 ± 3.5	124 ± 4.7	72 ± 5.2	117 ± 0.9	83 ± 4.4
100.0	69 ± 6.6	125 ± 4.3	93 ± 5.5	100 ± 2.6	86 ± 1.2
333.0	79 ± 3.0	114 ± 6.7	83 ± 7.5	92 ± 2.5	92 ± 7.2
1000.0	71 ± 5.2	119 ± 5.4	119 ± 8.0 ^P	120 ± 10.0	80 ± 1.3 ^P
2167.0	53 ± 8.7 ^S	Toxic	60 ± 3.6 ^S	93 ± 8.0 ^S	62 ± 5.8 ^S
Trial Summary	Negative	Negative	Negative	Negative	Negative
Positive Control ²					2933 ± 123.6
Positive Control ³			1930 ± 46.5	1382 ± 80.6	
Positive Control ⁴	1267 ± 16.4	1201 ± 20.1			

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Strain: TA100

Dose (ug/Plate)	With 10% Hamster S9
Vehicle Control ¹	115 ± 6.4
33.0	120 ± 11.6
100.0	107 ± 11.5
333.0	120 ± 9.2
1000.0	114 ± 9.5
2167.0	120 ± 14.8 ^s
Trial Summary	Negative
Positive Control ²	3243 ± 53.7
Positive Control ³	
Positive Control ⁴	

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Strain: TA1535

Dose (ug/Plate)	Without S9	Without S9	With 10% Rat S9	With 10% Rat S9	With 10% Hamster S9
Vehicle Control ¹	15 ± 1.7	24 ± 1.8	11 ± 1.5	12 ± 0.0	9 ± 1.5
33.0	13 ± 0.6	20 ± 1.5	10 ± 2.5	12 ± 2.0	6 ± 0.9
100.0	14 ± 3.5	19 ± 3.1	10 ± 1.7	9 ± 0.7	11 ± 3.0
333.0	14 ± 0.3	25 ± 1.2	10 ± 2.0	12 ± 2.3	9 ± 2.6
1000.0	11 ± 2.9	23 ± 5.9	6 ± 0.3 ^P	11 ± 3.1	8 ± 1.2 ^P
2167.0	Toxic	Toxic	10 ± 1.5 ^S	12 ± 2.0	11 ± 0.9 ^S
Trial Summary	Negative	Negative	Negative	Negative	Negative
Positive Control ²					135 ± 1.0
Positive Control ³			92 ± 17.0	102 ± 13.9	
Positive Control ⁴	1035 ± 39.3	984 ± 29.2			

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Strain: TA1535

Dose (ug/Plate)	With 10% Hamster S9
Vehicle Control ¹	13 ± 0.0
33.0	9 ± 1.2
100.0	12 ± 1.3
333.0	10 ± 1.7
1000.0	15 ± 0.7
2167.0	22 ± 5.2 ^s
Trial Summary	Negative
Positive Control ²	171 ± 8.4
Positive Control ³	
Positive Control ⁴	

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Date Report Requested: 09/11/2018

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Strain: TA1537

Dose (ug/Plate)	Without S9	Without S9	With 10% Rat S9	With 10% Rat S9	With 10% Hamster S9
Vehicle Control ¹	9 ± 2.6	9 ± 0.6	7 ± 0.9	11 ± 2.6	9 ± 0.9
33.0	7 ± 1.5	9 ± 1.5	7 ± 1.5	9 ± 2.5	12 ± 1.2
100.0	9 ± 1.2	12 ± 1.5	6 ± 1.0	12 ± 1.0	8 ± 1.5
333.0	6 ± 1.2	9 ± 0.6	7 ± 1.7	8 ± 1.2	10 ± 0.9
1000.0	8 ± 1.2	9 ± 1.7	8 ± 2.4 ^p	17 ± 3.2	10 ± 1.0 ^p
2167.0	6 ± 0.3 ^s	Toxic	7 ± 2.3 ^p	15 ± 1.3	7 ± 0.3 ^p
Trial Summary	Negative	Negative	Negative	Negative	Negative
Positive Control ²					366 ± 33.1
Positive Control ³			160 ± 15.2	160 ± 13.2	
Positive Control ⁵	282 ± 18.8	376 ± 39.8			

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Strain: TA1537

Dose (ug/Plate)	With 10% Hamster S9
Vehicle Control ¹	13 ± 1.2
33.0	12 ± 1.5
100.0	11 ± 2.3
333.0	13 ± 1.2
1000.0	14 ± 2.6
2167.0	12 ± 1.8
Trial Summary	Negative
Positive Control ²	408 ± 42.2
Positive Control ³	
Positive Control ⁵	

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Strain: TA98

Dose (ug/Plate)	Without S9	Without S9	With 10% Rat S9	With 10% Rat S9	With 10% Hamster S9
Vehicle Control ¹	14 ± 0.9	22 ± 3.5	23 ± 1.5	23 ± 1.9	24 ± 0.3
33.0	14 ± 2.9	23 ± 4.3	21 ± 1.9	33 ± 1.5	33 ± 2.9
100.0	14 ± 1.9	18 ± 2.6	25 ± 2.1	30 ± 2.1	28 ± 0.6
333.0	19 ± 2.5	18 ± 1.2	18 ± 0.9	33 ± 3.5	22 ± 1.9
1000.0	16 ± 2.6	20 ± 2.3	23 ± 1.2 ^P	31 ± 0.5	22 ± 0.6 ^P
2167.0	13 ± 4.6 ^S	Toxic	18 ± 1.2 ^S	31 ± 3.2	24 ± 1.2 ^P
Trial Summary	Negative	Negative	Negative	Negative	Negative
Positive Control ²					2654 ± 62.7
Positive Control ³			1737 ± 13.2	1295 ± 50.4	
Positive Control ⁶	1296 ± 6.4	1372 ± 60.8			

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Strain: TA98

Dose (ug/Plate)	With 10% Hamster S9
Vehicle Control ¹	34 ± 3.3
33.0	38 ± 1.5
100.0	38 ± 2.3
333.0	35 ± 4.6
1000.0	34 ± 0.9
2167.0	32 ± 3.2 ^s
Trial Summary	Negative
Positive Control ²	2670 ± 35.0
Positive Control ³	
Positive Control ⁶	

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LEGEND

Values given as Mean or Mean \pm Standard Error Mean

The number of samples = 3, unless samples marked toxic or contaminated were excluded from mean and SEM calculations

CAS Number = Chemical Abstracts Service registry number

1: Vehicle Control: Dimethyl Sulfoxide

2: 0.75 ug/Plate 2-Aminoanthracene

3: 1.5 ug/Plate 2-Aminoanthracene

4: 2.5 ug/Plate Sodium Azide

5: 80.0 ug/Plate 9-Aminoacridine

6: 12.0 ug/Plate 4-Nitro-O-Phenylenediamine

p: Precipitate

s: Slight Toxicity

**** END OF REPORT ****