Experiment Number: **A50290**

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

G06: Ames Summary Data

Test Compound: **Juglone**

CAS Number: **481-39-0**

Date Report Requested: **09/17/2018**

Time Report Requested: **03:47:57**

NTP Study Number: A50290

Study Result: Positive

Experiment Number: **A50290**

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

G06: Ames Summary Data

Test Compound: **Juglone**

CAS Number: **481-39-0**

Date Report Requested: **09/17/2018**

Time Report Requested: **03:47:57**

Strain: TA100

Dose (ug/Plate)	Without S9	Without S9	Without S9	Without S9	With 10% Rat S9
Vehicle Control[1]	132 ± 13.0	121 ± 7.2	107 ± 11.5	121 ± 16.0	143 ± 9.9
0.01	129 ± 6.7		109 ± 8.4		
0.033	115 ± 5.4	125 ± 1.5	117 ± 6.1	117 ± 2.5	
0.1	138 ± 15.5	117 ± 5.2	112 ± 10.3	122 ± 7.4	
0.33	143 ± 8.3	132 ± 6.9	123 ± 5.1	156 ± 8.2	
1.0	183 ± 13.3	197 ± 10.7	190 ± 11.0	187 ± 25.0	130 ± 1.5
1.5				107 ± 3.2[s]	
2.0		99 ± 14.5[s]			
3.3					129 ± 4.7
10.0					135 ± 12.1
20.0					
33.0					213 ± 25.2
50.0					
100.0					Toxic
200.0					
333.0					
Trial Summary	Positive	Weakly Positive	Weakly Positive	Weakly Positive	Equivocal
Positive Control[2]					
Positive Control[3]	293 ± 25.8	300 ± 14.0	310 ± 13.4	295 ± 18.9	
Positive Control[4]					370 ± 37.9
Positive Control[5]					
Positive Control[6]					

Experiment Number: **A50290**

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

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Test Compound: **Juglone**

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Date Report Requested: **09/17/2018**

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Strain: TA100

Dose (ug/Plate)	With 10% Rat S9	With 30% Rat S9	With 30% Rat S9	With 10% Hamster S9	With 10% Hamster S9
Vehicle Control[1]	115 ± 9.1	103 ± 8.1	89 ± 3.9	144 ± 11.9	131 ± 5.9
0.01					
0.033					
0.1					
0.33					
1.0	110 ± 4.5			122 ± 13.7	
1.5					
2.0					
3.3	140 ± 11.8	114 ± 1.5	101 ± 5.8	140 ± 3.7	113 ± 12.4
10.0	134 ± 7.8	115 ± 4.3	83 ± 4.4	142 ± 6.7	133 ± 11.6
20.0					158 ± 9.9
33.0	144 ± 2.5[s]	132 ± 14.7	76 ± 3.5	253 ± 21.0	187 ± 14.7
50.0	0 ± 0.0[s]				18 ± 17.7[s]
100.0		143 ± 3.3	108 ± 9.6[s]	Toxic	
200.0			Toxic		
333.0		Toxic			
Trial Summary	Negative	Negative	Negative	Equivocal	Negative
Positive Control[2]				695 ± 19.0	946 ± 11.7
Positive Control[3]					
Positive Control[4]	340 ± 21.5				
Positive Control[5]					
Positive Control[6]		337 ± 39.3	380 ± 99.7		

Experiment Number: **A50290**

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

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Test Compound: **Juglone**

CAS Number: **481-39-0**

Date Report Requested: **09/17/2018**

Time Report Requested: **03:47:57**

Strain: TA100

Dose (ug/Plate)	With 30% Hamster S9
Vehicle Control[1]	132 ± 5.5
0.01	
0.033	
0.1	
0.33	
1.0	
1.5	
2.0	
3.3	112 ± 3.6
10.0	122 ± 2.0
20.0	
33.0	132 ± 9.5
50.0	
100.0	154 ± 3.8
200.0	
333.0	Toxic
Trial Summary	Negative
Positive Control[2]	
Positive Control[3]	
Positive Control[4]	
Positive Control[5]	530 ± 5.6
Positive Control[6]	

Experiment Number: **A50290**

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

G06: Ames Summary Data

Test Compound: **Juglone**

CAS Number: **481-39-0**

Date Report Requested: **09/17/2018**

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Strain: TA1535

Dose (ug/Plate)	Without S9	Without S9	Without S9	With 10% Rat S9	With 30% Rat S9
Vehicle Control[1]	16 ± 0.9	16 ± 0.7	14 ± 0.7	12 ± 1.2	10 ± 2.0
0.01		15 ± 2.0	17 ± 2.5		
0.033	12 ± 1.2	15 ± 3.5	17 ± 0.9		
0.1	13 ± 2.6	14 ± 2.6	17 ± 1.2		
0.33	5 ± 1.9	15 ± 2.4	15 ± 1.8		
1.0	11 ± 2.5[s]	8 ± 0.3[s]	19 ± 2.7	11 ± 1.3	11 ± 0.6
2.0	6 ± 0.5[s]				
3.3				11 ± 1.5	15 ± 2.1
10.0				14 ± 1.2	13 ± 1.3
33.0				11 ± 1.5	14 ± 2.5
100.0				Toxic	9 ± 1.2
Trial Summary	Negative	Negative	Negative	Negative	Negative
Positive Control[2]					
Positive Control[3]	213 ± 13.9	88 ± 6.1	229 ± 37.6		
Positive Control[5]					
Positive Control[6]				124 ± 7.4	48 ± 3.2

Experiment Number: **A50290**

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

G06: Ames Summary Data

Test Compound: **Juglone**

CAS Number: **481-39-0**

Date Report Requested: **09/17/2018**

Time Report Requested: **03:47:57**

Strain: TA1535

Dose (ug/Plate)	With 10% Hamster S9	With 30% Hamster S9
Vehicle Control[1]	15 ± 3.4	12 ± 1.3
0.01		
0.033		
0.1		
0.33		
1.0	14 ± 2.1	9 ± 1.2
2.0		
3.3	19 ± 2.7	14 ± 2.6
10.0	13 ± 2.6	7 ± 1.5
33.0	19 ± 2.3	11 ± 1.2
100.0	5 ± 1.0[s]	12 ± 2.4
Trial Summary	Negative	Negative
Positive Control[2]	82 ± 5.5	
Positive Control[3]		
Positive Control[5]		60 ± 3.4
Positive Control[6]		

Experiment Number: **A50290**

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

G06: Ames Summary Data

Test Compound: **Juglone**

CAS Number: **481-39-0**

Date Report Requested: **09/17/2018**

Time Report Requested: **03:47:57**

Strain: TA1538

Dose (ug/Plate)	Without S9
Vehicle Control[1]	10 ± 0.6
0.033	10 ± 4.3
0.1	7 ± 1.2
0.33	11 ± 1.8
0.5	11 ± 0.3[s]
1.0	Toxic
Trial Summary	Negative
Positive Control[7]	255 ± 25.7

Experiment Number: **A50290**

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

G06: Ames Summary Data

Test Compound: **Juglone**

CAS Number: **481-39-0**

Date Report Requested: **09/17/2018**

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Strain: TA97

Dose (ug/Plate)	Without S9	Without S9	Without S9	With 10% Rat S9	With 30% Rat S9
Vehicle Control[1]	95 ± 8.7	89 ± 9.9	128 ± 7.8	142 ± 0.9	179 ± 8.0
0.01	112 ± 3.2	84 ± 9.1			
0.033		91 ± 13.0	130 ± 3.8		
0.035	104 ± 7.4				
0.1	91 ± 5.4	86 ± 4.2	118 ± 6.2		
0.33	99 ± 4.7	89 ± 4.1	179 ± 7.3		
1.0	70 ± 2.3[s]	107 ± 0.9	174 ± 7.0	125 ± 24.3	165 ± 14.6
1.5			86 ± 2.7[s]		
3.3				112 ± 3.4	157 ± 13.4
10.0				126 ± 7.8	144 ± 4.8
20.0					
33.0				41 ± 8.1[s]	149 ± 15.9
50.0					
100.0				15 ± 4.5[s]	148 ± 4.6
Trial Summary	Negative	Equivocal	Equivocal	Negative	Negative
Positive Control[4]					
Positive Control[6]				539 ± 29.4	442 ± 28.6
Positive Control[8]	239 ± 20.1	188 ± 4.2	484 ± 54.9		

Experiment Number: **A50290**

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

G06: Ames Summary Data

Test Compound: **Juglone**

CAS Number: **481-39-0**

Date Report Requested: **09/17/2018**

Time Report Requested: **03:47:57**

Strain: TA97

Dose (ug/Plate)	With 10% Hamster S9	With 10% Hamster S9	With 30% Hamster S9
Vehicle Control[1]	108 ± 3.8	140 ± 3.5	128 ± 4.4
0.01			
0.033			
0.035			
0.1			
0.33			
1.0	116 ± 3.8		120 ± 8.9
1.5			
3.3	126 ± 5.4	142 ± 13.6	123 ± 21.7
10.0	147 ± 7.7	177 ± 6.2	122 ± 2.9
20.0		247 ± 10.5	
33.0	195 ± 23.0	287 ± 3.2	118 ± 6.4
50.0		93 ± 11.0[s]	
100.0	Toxic		146 ± 9.3
Trial Summary	Weakly Positive	Weakly Positive	Negative
Positive Control[4]	564 ± 29.9	1061 ± 106.3	
Positive Control[6]			727 ± 151.6
Positive Control[8]			

Experiment Number: **A50290**

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

G06: Ames Summary Data

Test Compound: **Juglone**

CAS Number: **481-39-0**

Date Report Requested: **09/17/2018**

Time Report Requested: **03:47:57**

Strain: TA98

Dose (ug/Plate)	Without S9	Without S9	Without S9	Without S9	With 10% Rat S9
Vehicle Control[1]	19 ± 2.8	16 ± 3.2	14 ± 2.3	11 ± 0.9	19 ± 1.2
0.01	17 ± 2.2	13 ± 2.0			
0.033	17 ± 1.2	11 ± 0.3	16 ± 2.7	10 ± 0.7	
0.1	21 ± 2.3	12 ± 1.2	11 ± 1.8	13 ± 0.6	
0.33	28 ± 2.5	16 ± 2.9	14 ± 1.5	20 ± 0.7	
0.5		28 ± 1.5			
0.67				17 ± 4.6	
1.0	7 ± 1.2[s]		29 ± 2.1	30 ± 5.2	17 ± 1.8
1.5			9 ± 1.5[s]		
3.3					16 ± 0.9
10.0					17 ± 2.0
20.0					25 ± 0.9
33.0					5 ± 3.5[s]
40.0					
50.0					
100.0					
200.0					
333.0					
Trial Summary	Equivocal	Equivocal	Weakly Positive	Positive	Negative
Positive Control[2]					717 ± 36.9
Positive Control[5]					
Positive Control[7]	175 ± 10.0	227 ± 17.9	109 ± 1.2	83 ± 5.2	

Experiment Number: **A50290**

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

G06: Ames Summary Data

Test Compound: **Juglone**

CAS Number: **481-39-0**

Date Report Requested: **09/17/2018**

Time Report Requested: **03:47:57**

Strain: TA98

Dose (ug/Plate)	With 30% Rat S9	With 30% Rat S9	With 10% Hamster S9	With 10% Hamster S9	With 30% Hamster S9
Vehicle Control[1]	17 ± 4.1	25 ± 3.8	13 ± 1.7	17 ± 2.8	18 ± 1.8
0.01					
0.033					
0.1					
0.33					
0.5					
0.67					
1.0					
1.5					
3.3	19 ± 0.0	23 ± 3.2	13 ± 1.2	20 ± 2.4	22 ± 2.8
10.0	26 ± 3.1	25 ± 4.8	14 ± 2.3	20 ± 1.2	21 ± 1.5
20.0			23 ± 4.6	20 ± 2.3	
33.0	17 ± 2.6	19 ± 0.0	18 ± 5.0	37 ± 4.8	20 ± 2.7
40.0				25 ± 0.7	
50.0			1 ± 1.0[s]		
100.0	27 ± 4.2	6 ± 3.3[s]			23 ± 2.2
200.0		Toxic			
333.0	Toxic				Toxic
Trial Summary	Equivocal	Negative	Equivocal	Positive	Negative
Positive Control[2]			1113 ± 42.5	484 ± 52.3	
Positive Control[5]	193 ± 10.4	302 ± 43.3			584 ± 31.0
Positive Control[7]					

LEGEND

Values given as Mean or Mean ± 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: 0.4 ug/Plate 2-Aminoanthracene
3: 0.5 ug/Plate Sodium Azide
4: 0.75 ug/Plate 2-Aminoanthracene
5: 1.0 ug/Plate 2-Aminoanthracene
6: 2.0 ug/Plate 2-Aminoanthracene
7: 1.0 ug/Plate 4-Nitro-O-Phenylenediamine
8: 24.0 ug/Plate 9-Aminoacridine
s: Slight Toxicity

** END OF REPORT **