

Experiment Number: 941876

Test Type: Genetic Toxicology - Bacterial
Mutagenicity

G06: Ames Summary Data

Test Compound: Isobutyraldehyde

CAS Number: 78-84-2

Date Report Requested: 09/17/2018

Time Report Requested: 12:42:08

NTP Study Number:

941876

Study Result:

Equivocal

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Test Compound: Isobutyraldehyde

CAS Number: 78-84-2

Date Report Requested: 09/17/2018

Time Report Requested: 12:42:08

Strain: TA100

Dose (ug/Plate)	Without S9	Without S9	With 10% Rat S9	With 30% Rat S9	With 10% Hamster S9
Vehicle Control ¹	182 ± 1.7	153 ± 3.1	166 ± 8.0	176 ± 11.4	189 ± 3.8
10.0		156 ± 3.2			
33.0	169 ± 4.7	174 ± 11.9	172 ± 8.4		199 ± 11.2
100.0	174 ± 1.5	166 ± 5.3	192 ± 1.2	164 ± 17.6	200 ± 5.5
333.0	170 ± 5.5	165 ± 10.7	186 ± 1.2	176 ± 5.0	191 ± 9.7
1000.0	111 ± 8.0	141 ± 13.0	168 ± 3.6	191 ± 6.2	194 ± 18.2
1666.0	0 ± 0.0 ^s				
3333.0			65 ± 6.4 ^s	161 ± 5.2	80 ± 16.0 ^s
6666.0			39 ± 9.2 ^s		
10000.0				73 ± 3.2 ^s	
Trial Summary	Negative	Negative	Negative	Negative	Negative
Positive Control ²					923 ± 32.0
Positive Control ³			587 ± 31.0		
Positive Control ⁴				443 ± 42.6	
Positive Control ⁵	466 ± 15.3	696 ± 6.4			

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Strain: TA100

Dose (ug/Plate)	With 30% Hamster S9
Vehicle Control ¹	171 ± 4.4
10.0	
33.0	
100.0	167 ± 7.4
333.0	182 ± 11.7
1000.0	173 ± 9.1
1666.0	
3333.0	164 ± 21.9
6666.0	124 ± 12.8 ^s
10000.0	
Trial Summary	Negative
Positive Control ²	
Positive Control ³	638 ± 10.9
Positive Control ⁴	
Positive Control ⁵	

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Strain: TA1535

Dose (ug/Plate)	Without S9	Without S9	With 10% Rat S9	With 30% Rat S9	With 10% Hamster S9
Vehicle Control ¹	10 ± 0.6	11 ± 1.5	8 ± 0.6	15 ± 1.7	9 ± 2.7
10.0	11 ± 0.9	7 ± 1.2			
33.0	6 ± 0.9	9 ± 1.0	12 ± 1.2		11 ± 2.6
100.0	11 ± 0.3	12 ± 2.0	11 ± 1.8	14 ± 1.7	8 ± 1.0
333.0	4 ± 0.6	10 ± 1.5	9 ± 2.3	10 ± 2.2	9 ± 1.7
1000.0	13 ± 1.7	6 ± 2.1	11 ± 3.3	12 ± 0.7	11 ± 1.5
3333.0			5 ± 1.2 ^s	9 ± 2.1	7 ± 1.2 ^s
6666.0			1 ± 1.0 ^s	10 ± 0.9	
Trial Summary	Negative	Negative	Negative	Negative	Negative
Positive Control ³					111 ± 3.2
Positive Control ⁴			94 ± 4.2		
Positive Control ⁵	585 ± 19.9	532 ± 26.4			
Positive Control ⁶				106 ± 10.8	

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Test Compound: Isobutyraldehyde
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Strain: TA1535

Dose (ug/Plate)	With 30% Hamster S9
Vehicle Control ¹	12 ± 1.0
10.0	
33.0	12 ± 2.7
100.0	12 ± 0.9
333.0	12 ± 2.7
1000.0	9 ± 1.5
3333.0	14 ± 1.0
6666.0	
Trial Summary	Negative
Positive Control ³	
Positive Control ⁴	256 ± 24.9
Positive Control ⁵	
Positive Control ⁶	

Experiment Number: 941876

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Test Compound: Isobutyraldehyde

CAS Number: 78-84-2

Date Report Requested: 09/17/2018

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Strain: TA1537

Dose (ug/Plate)	Without S9	Without S9	With 10% Rat S9	With 30% Rat S9	With 10% Hamster S9
Vehicle Control ¹	4 ± 0.9	7 ± 0.3	7 ± 0.7	6 ± 2.0	8 ± 0.6
10.0	3 ± 0.6	8 ± 0.3			
33.0	4 ± 0.3	7 ± 3.0	8 ± 0.7	7 ± 1.2	6 ± 0.7
100.0	5 ± 1.2	6 ± 0.0	8 ± 2.0	8 ± 0.3	8 ± 0.6
333.0	3 ± 0.3	7 ± 1.2	6 ± 0.7	8 ± 0.7	9 ± 2.0
1000.0	4 ± 1.5	4 ± 1.5	7 ± 1.2	8 ± 0.7	7 ± 1.0
3333.0			7 ± 0.7	7 ± 1.5	7 ± 1.2
Trial Summary	Negative	Negative	Negative	Negative	Negative
Positive Control ³					90 ± 6.4
Positive Control ⁴			69 ± 9.9		
Positive Control ⁶				64 ± 5.6	
Positive Control ⁷	102 ± 14.3	183 ± 3.1			

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Strain: TA1537

Dose (ug/Plate)	With 30% Hamster S9
Vehicle Control ¹	5 ± 1.3
10.0	
33.0	6 ± 1.5
100.0	9 ± 2.0
333.0	7 ± 2.0
1000.0	6 ± 0.6
3333.0	8 ± 2.3
Trial Summary	Negative
Positive Control ³	
Positive Control ⁴	90 ± 9.2
Positive Control ⁶	
Positive Control ⁷	

Experiment Number: 941876

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Test Compound: Isobutyraldehyde

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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	188 ± 16.3	154 ± 10.1	206 ± 17.6	187 ± 12.4	258 ± 0.6
10.0	213 ± 3.5	156 ± 8.6	232 ± 3.3		
33.0	224 ± 3.7	168 ± 9.4	223 ± 8.2	199 ± 8.5	
100.0	224 ± 4.8	156 ± 4.2	225 ± 3.2	196 ± 14.5	269 ± 4.4
333.0	225 ± 3.3	153 ± 3.8	235 ± 2.0	197 ± 10.1	243 ± 16.2
666.0		157 ± 15.0			
1000.0	252 ± 4.1	121 ± 9.8	227 ± 3.0	193 ± 5.0	248 ± 6.2
1666.0		17 ± 9.1 ^s			
3333.0				108 ± 8.8 ^s	214 ± 6.3
6666.0				87 ± 8.1 ^s	211 ± 13.8
Trial Summary	Equivocal	Negative	Negative	Negative	Negative
Positive Control ²					
Positive Control ³				376 ± 5.5	
Positive Control ⁴					378 ± 19.7
Positive Control ⁷	554 ± 8.3	453 ± 10.5	480 ± 16.0		

Experiment Number: 941876

Test Type: Genetic Toxicology - Bacterial
Mutagenicity

G06: Ames Summary Data

Test Compound: Isobutyraldehyde

CAS Number: 78-84-2

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Strain: TA97

Dose (ug/Plate)	With 5% Hamster S9	With 10% Hamster S9	With 10% Hamster S9	With 30% Hamster S9	With 30% Hamster S9
Vehicle Control ¹	154 ± 1.9	149 ± 3.6	197 ± 10.7	219 ± 7.2	151 ± 12.7
10.0					
33.0			227 ± 2.1	214 ± 5.5	
100.0	145 ± 21.5	159 ± 3.5	227 ± 4.0	224 ± 1.5	159 ± 6.4
333.0	173 ± 4.8	147 ± 7.0	226 ± 3.3	228 ± 9.2	162 ± 5.4
666.0	175 ± 4.6	154 ± 8.3			178 ± 3.2
1000.0	166 ± 13.1	154 ± 9.9	260 ± 6.4	247 ± 7.1	179 ± 4.0
1666.0	157 ± 14.0	175 ± 2.0			192 ± 11.3
3333.0	72 ± 15.2 ^s	130 ± 21.0 ^s	168 ± 10.4 ^s	254 ± 9.4	166 ± 6.9
6666.0					
Trial Summary	Negative	Negative	Equivocal	Negative	Equivocal
Positive Control ²	559 ± 9.1	462 ± 14.1	639 ± 31.8		
Positive Control ³				426 ± 12.7	424 ± 27.5
Positive Control ⁴					
Positive Control ⁷					

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Test Compound: Isobutyraldehyde
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Strain: TA97

Dose (ug/Plate)	With 30% Hamster S9
Vehicle Control ¹	186 ± 5.8
10.0	
33.0	
100.0	182 ± 10.5
333.0	184 ± 8.6
666.0	192 ± 10.7
1000.0	177 ± 7.9
1666.0	221 ± 5.2
3333.0	
6666.0	
Trial Summary	Negative
Positive Control ²	
Positive Control ³	562 ± 20.2
Positive Control ⁴	
Positive Control ⁷	

Experiment Number: 941876

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Strain: TA98

Dose (ug/Plate)	Without S9	Without S9	Without S9	With 10% Rat S9	With 30% Rat S9
Vehicle Control ¹	19 ± 0.9	18 ± 1.2	26 ± 3.8	22 ± 2.0	25 ± 4.5
3.0		24 ± 3.5			
10.0		22 ± 1.5	29 ± 0.3		
33.0	22 ± 4.6	24 ± 2.3	28 ± 1.5	29 ± 3.3	
100.0	21 ± 2.2	18 ± 1.2	29 ± 4.7	19 ± 1.9	31 ± 4.0
333.0	20 ± 4.7	24 ± 3.7	26 ± 4.5	23 ± 1.8	24 ± 1.8
1000.0	2 ± 1.5 ^s		21 ± 4.6	17 ± 2.5	23 ± 1.9
1666.0	0 ± 0.0 ^s				
3333.0				6 ± 1.8 ^s	19 ± 2.6
6666.0				12 ± 5.9 ^s	
10000.0					9 ± 3.0 ^s
Trial Summary	Negative	Negative	Negative	Negative	Negative
Positive Control ²					
Positive Control ³				347 ± 20.2	129 ± 3.8
Positive Control ⁸	399 ± 23.8	825 ± 31.3	1046 ± 3.2		

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Test Compound: Isobutyraldehyde
CAS Number: 78-84-2

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Strain: TA98

Dose (ug/Plate)	With 10% Hamster S9	With 30% Hamster S9
Vehicle Control ¹	22 ± 2.1	28 ± 5.4
3.0		
10.0		
33.0	25 ± 3.8	
100.0	19 ± 3.8	24 ± 2.2
333.0	22 ± 2.2	23 ± 2.7
1000.0	23 ± 3.7	21 ± 2.6
1666.0		
3333.0	3 ± 1.7 ^s	16 ± 0.9
6666.0		1 ± 1.3 ^s
10000.0		
Trial Summary	Negative	Negative
Positive Control ²	700 ± 44.7	
Positive Control ³		345 ± 9.1
Positive Control ⁸		

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Strain: TA102

Dose (ug/Plate)	Without S9	Without S9	With 10% Rat S9	With 30% Rat S9	With 10% Hamster S9
Vehicle Control ¹	217 ± 15.3	217 ± 4.0	248 ± 13.5	272 ± 7.9	256 ± 5.7
10.0	206 ± 9.1	238 ± 12.8			
33.0	199 ± 19.3	253 ± 20.1	234 ± 12.4	247 ± 9.1	271 ± 3.7
100.0	213 ± 15.5	242 ± 8.2	262 ± 12.3	275 ± 18.7	236 ± 11.5
333.0	216 ± 16.5	245 ± 13.3	256 ± 9.7	267 ± 13.9	264 ± 16.1
1000.0	134 ± 10.4	242 ± 23.1	233 ± 19.2	238 ± 9.9	252 ± 21.5
3333.0			240 ± 23.6	283 ± 5.4	276 ± 6.2
Trial Summary	Negative	Negative	Negative	Negative	Negative
Positive Control ⁹	798 ± 20.0	851 ± 16.1			
Positive Control ⁶					903 ± 6.4
Positive Control ¹⁰			636 ± 35.9	704 ± 28.9	

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Test Compound: Isobutyraldehyde
CAS Number: 78-84-2

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Strain: TA102

Dose (ug/Plate)	With 30% Hamster S9
Vehicle Control ¹	266 ± 9.1
10.0	
33.0	294 ± 12.7
100.0	266 ± 31.3
333.0	269 ± 10.3
1000.0	242 ± 5.5
3333.0	228 ± 48.4
Trial Summary	Negative
Positive Control ⁹	
Positive Control ⁶	955 ± 15.9
Positive Control ¹⁰	

Experiment Number: 941876

Test Type: Genetic Toxicology - Bacterial
Mutagenicity

G06: Ames Summary Data

Test Compound: Isobutyraldehyde

CAS Number: 78-84-2

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Strain: TA104

Dose (ug/Plate)	Without S9	Without S9	With 5% Rat S9	With 10% Rat S9	With 10% Rat S9
Vehicle Control ¹	367 ± 8.1	258 ± 22.4	298 ± 14.5	367 ± 19.8	328 ± 9.8
10.0	391 ± 15.9	299 ± 14.4	335 ± 13.6		360 ± 4.8
33.0	359 ± 7.3	329 ± 27.5	390 ± 3.4	390 ± 13.2	348 ± 19.5
100.0	353 ± 9.5	300 ± 12.4	385 ± 12.5	413 ± 12.4	370 ± 21.9
333.0	316 ± 10.0	306 ± 15.7	372 ± 13.0	456 ± 5.0	396 ± 9.7
666.0			334 ± 1.5		382 ± 50.1
1000.0	328 ± 22.5	233 ± 29.2	386 ± 9.4	425 ± 9.2	380 ± 15.4
3333.0				86 ± 13.8 ^s	
6666.0				90 ± 13.7 ^s	
Trial Summary	Negative	Negative	Equivocal	Equivocal	Equivocal
Positive Control ⁴					
Positive Control ⁶			819 ± 30.3	1173 ± 52.7	790 ± 27.2
Positive Control ¹¹	796 ± 45.2	1031 ± 38.5			

Experiment Number: 941876

Test Type: Genetic Toxicology - Bacterial
Mutagenicity

G06: Ames Summary Data

Test Compound: Isobutyraldehyde

CAS Number: 78-84-2

Date Report Requested: 09/17/2018

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Strain: TA104

Dose (ug/Plate)	With 30% Rat S9	With 10% Hamster S9	With 30% Hamster S9
Vehicle Control ¹	508 ± 14.7	385 ± 6.4	487 ± 3.5
10.0			
33.0	498 ± 12.3	362 ± 42.7	469 ± 9.2
100.0	465 ± 7.5	369 ± 6.7	456 ± 1.7
333.0	471 ± 8.3	374 ± 14.8	468 ± 11.2
666.0			
1000.0	452 ± 13.3	316 ± 17.2	496 ± 19.6
3333.0	398 ± 17.4	147 ± 10.2 ^s	480 ± 11.9
6666.0			
Trial Summary	Negative	Negative	Negative
Positive Control ⁴		1295 ± 31.8	968 ± 20.1
Positive Control ⁶	789 ± 4.6		
Positive Control ¹¹			

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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: 0.5 ug/Plate 2-Aminoanthracene
 - 3: 1.0 ug/Plate 2-Aminoanthracene
 - 4: 2.5 ug/Plate 2-Aminoanthracene
 - 5: 5.0 ug/Plate Sodium Azide
 - 6: 5.0 ug/Plate 2-Aminoanthracene
 - 7: 50.0 ug/Plate 9-Aminoacridine
 - 8: 2.5 ug/Plate 4-Nitro-O-Phenylenediamine
 - 9: 0.5 ug/Plate Mitomycin-C
 - 10: 10.0 ug/Plate 2-Aminoanthracene
 - 11: 250.0 ug/Plate Methyl Methane Sulfonate
- s: Slight Toxicity

** END OF REPORT **