

Experiment Number: **G18031C**

Test Type: **Genetic Toxicology - In Vitro
Micronucleus**

G03: In Vitro Micronucleus Summary Data

Test Compound: **Roundup Concentrate Plus|Distilled Water**

Date Report Requested: **09/24/2021**

Time Report Requested: **16:05:25**

NTP Study Number:

G18031C

Cell Type:

TK6

Study Result:

Equivocal

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MicronucleusG03: In Vitro Micronucleus Summary Data
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Date Report Requested: 09/24/2021

Time Report Requested: 16:05:25

Duration: 4 h; Activation: Without S9

Concentration (dilution)	% Relative Survival	% Apoptosis and Necrosis	Fold Change in Apoptosis and Necrosis	% MN	p-Value
	Mean	Mean	Mean	Mean ± SEM	
Vehicle Control ¹	100.0	1.79	1.0	0.470 ± 0.036	
0.000067	86.2	2.93	1.6	0.613 ± 0.134	1.0000
0.000095	90.5	2.67	1.5	0.627 ± 0.082	0.6718
0.000134	97.5	1.93	1.1	0.540 ± 0.080	1.0000
0.00019	91.8	1.87	1.0	0.413 ± 0.097	1.0000
0.000233	90.6	1.97	1.1	0.733 ± 0.066	0.0944
0.000285	92.6	1.83	1.0	0.680 ± 0.140	0.6050
0.000349	90.6	1.7	1.0	0.493 ± 0.116	1.0000
0.000428	89.2	1.87	1.0	0.427 ± 0.013	1.0000
0.000524	82.9	1.87	1.0	0.460 ± 0.020	1.0000
0.000642	80.9	1.67	0.9	0.407 ± 0.082	1.0000
0.000786	86.2	1.87	1.0	0.713 ± 0.077	0.1634
0.001111	0.9	93.97	52.6	43.840 ± 10.950	
Trend p-Value				0.1986	
VIN ²	73.7	8.6	4.8	2.560 ± 0.389	0.0010 *
Trial Summary: Negative					

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Date Report Requested: 09/24/2021

Test Type: Genetic Toxicology - In Vitro
Micronucleus

Time Report Requested: 16:05:25

Duration: 24 h; Activation: Without S9

Concentration (dilution)	% Relative Survival	% Apoptosis and Necrosis	Fold Change in Apoptosis and Necrosis	% MN	p-Value
	Mean	Mean	Mean	Mean ± SEM	
Vehicle Control ¹	100.0	1.74	1.0	0.432 ± 0.029	
0.000067	98.8	2.43	1.4	0.660 ± 0.076	0.0889
0.000095	97.4	1.9	1.1	0.427 ± 0.047	1.0000
0.000134	89.0	1.97	1.1	0.460 ± 0.000	1.0000
0.00019	91.4	1.9	1.1	0.520 ± 0.103	1.0000
0.000233	86.7	2.17	1.2	0.393 ± 0.052	1.0000
0.000285	87.9	2.1	1.2	0.567 ± 0.093	0.6924
0.000349	81.1	2.33	1.3	0.567 ± 0.024	0.3378
0.000428	78.7	2.57	1.5	0.753 ± 0.093	0.0290
0.000524	74.2	3.87	2.2	1.033 ± 0.213	0.0055 *
0.000642	62.6	8.6	5.0	1.830 ± 0.050	
0.000786	45.9	23.57	13.6	1.430 ± 0.210	
0.001111	0.1	98.2	56.6	1.520 ± 1.520	
Trend p-Value				< 0.001 *	
VIN ³	89.8	5.8	3.3	2.790 ± 0.117	< 0.001 *
Trial Summary: Equivocal					

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Micronucleus

Time Report Requested: 16:05:25

Duration: 24 h; Activation: Without S9

Concentration (dilution)	% Relative Survival	% Apoptosis and Necrosis	Fold Change in Apoptosis and Necrosis	% MN	p-Value
	Mean	Mean	Mean	Mean ± SEM	
Vehicle Control ¹	100.0	1.35	1.0	0.624 ± 0.064	
0.000067	93.1	1.97	1.5	0.453 ± 0.041	1.0000
0.000095	92.1	2.03	1.5	0.453 ± 0.037	1.0000
0.000134	82.9	2.77	2.0	0.533 ± 0.127	1.0000
0.00019	81.2	2.3	1.7	0.440 ± 0.000	1.0000
0.000233	78.0	2.8	2.1	0.520 ± 0.031	1.0000
0.000285	77.6	2.43	1.8	0.567 ± 0.048	1.0000
0.000349	70.1	3.73	2.8	0.593 ± 0.048	1.0000
0.000428	55.9	10.43	7.7	0.950 ± 0.060	
0.000524	29.1	36.0	26.7	1.560 ± 0.230	
0.000642	0.5	97.4	72.1	0.720 ± 0.520	
0.000786	0.1	99.17	73.5	26.090 ± 26.090	
0.001111	0.0	98.43	72.9	0.000 ± 0.000	
Trend p-Value				0.5144	
VIN ⁴	61.1	10.05	7.4	14.145 ± 1.127	0.0010 *
Trial Summary: Negative					

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Date Report Requested: 09/24/2021

Test Type: Genetic Toxicology - In Vitro
Micronucleus

Time Report Requested: 16:05:25

Duration: 4 h; Activation: With 1% Rat S9

Concentration (dilution)	% Relative Survival	% Apoptosis and Necrosis	Fold Change in Apoptosis and Necrosis	% MN	p-Value
	Mean	Mean	Mean	Mean ± SEM	
Vehicle Control ¹	100.0	1.78	1.0	0.503 ± 0.035	
0.000076	110.5	1.97	1.1	0.353 ± 0.048	1.0000
0.000107	109.4	2.0	1.1	0.560 ± 0.090	1.0000
0.000151	102.4	1.93	1.1	0.387 ± 0.109	1.0000
0.000214	104.8	1.67	0.9	0.407 ± 0.070	1.0000
0.000262	103.5	2.17	1.2	0.413 ± 0.096	1.0000
0.000321	105.8	2.23	1.3	0.380 ± 0.023	1.0000
0.000393	93.5	2.3	1.3	0.340 ± 0.060	1.0000
0.000481	93.9	2.37	1.3	0.327 ± 0.037	1.0000
0.000589	90.5	2.37	1.3	0.420 ± 0.035	1.0000
0.000722	87.2	2.63	1.5	0.433 ± 0.029	1.0000
0.000884	93.0	2.47	1.4	0.473 ± 0.024	1.0000
0.00125	48.5	11.07	6.2	1.170 ± 0.390	
Trend p-Value				0.9461	
CPA ⁵	53.7	8.3	4.7	2.750 ± 0.225	0.0010 *
Trial Summary: Negative					

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Time Report Requested: 16:05:25

Duration: 4 h; Activation: With 1% Rat S9

Concentration (dilution)	% Relative Survival	% Apoptosis and Necrosis	Fold Change in Apoptosis and Necrosis	% MN	p-Value
	Mean	Mean	Mean	Mean ± SEM	
Vehicle Control ¹	100.0	1.56	1.0	0.392 ± 0.016	
0.000134	86.5	1.7	1.1	0.547 ± 0.127	0.6686
0.00019	99.9	1.6	1.0	0.427 ± 0.024	1.0000
0.000269	102.3	1.7	1.1	0.407 ± 0.048	1.0000
0.00038	96.3	1.83	1.2	0.413 ± 0.067	1.0000
0.000466	89.4	2.43	1.6	0.547 ± 0.104	0.4116
0.00057	75.2	4.4	2.8	0.880 ± 0.076	0.0051 *
0.000698	43.1	11.53	7.4	1.490 ± 0.250	
0.000855	4.8	47.77	30.7	3.890 ± 0.940	
0.001048	0.2	83.0	53.4	12.500 ± 0.000	
0.001283	0.0	94.2	60.6	300.000 ± 0.000	
0.001571	0.0	93.8	60.3	200.000 ± 0.000	
0.002222	0.1	96.13	61.8	17.320 ± 13.040	
Trend p-Value				0.0022 *	
CPA ⁵	47.4	7.63	4.9	2.275 ± 0.440	< 0.001 *

Trial Summary: Equivocal

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LEGEND

MN = Micronuclei, CAS = Chemical abstract registry

For the 4 h chemical exposures with and without S9, the medium with test article (and S9, if present) is changed after 4 h and replaced with fresh medium without test article or S9, and cells are cultured for an additional 20 h to achieve a total culture time of 24 h

Values given as Mean or Mean \pm Standard Error Mean

Statistical analysis only performed on: % MN

Pairwise comparison with the vehicle control; values are significant at $P \leq 0.025$ by Dunn's test

Positive control: pairwise comparison with the vehicle control; values are significant at $P \leq 0.05$ by Mann Whitney U test

Apoptotic and necrotic cells are detected in the assay as ethidium monoazide (EMA)-positive events

Concentration-related trend; significant at $P \leq 0.025$ by Jonckheere's test

* Statistically significant pairwise or trend test

The number of wells per concentration of test article = 3

1: Vehicle Control: Distilled Water

2: Positive Control: 3 ng/mL Vinblastine sulfate

3: Positive Control: 0.5 ng/mL Vinblastine sulfate

4: Positive Control: 0.75 ng/mL Vinblastine sulfate

5: Positive Control: 3 ug/mL Cyclophosphamide monohydrate

**** END OF REPORT ****