Experiment Number: A90714
Test Type: Genetic Toxicology - Bacterial Mutagenicity

G06: Ames Summary Data
Test Compound: Malachite green
CAS Number: 569-64-2

NTP Study Number: A90714
Study Result: Negative
# Ames Summary Data

**Test Compound:** Malachite green  
**CAS Number:** 569-64-2  
**Strain:** TA100

<table>
<thead>
<tr>
<th>Dose (µg/Plate)</th>
<th>Without S9</th>
<th>With 10% Rat S9</th>
<th>With 30% Rat S9</th>
<th>With 10% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control</td>
<td>127 ± 0.9</td>
<td>112 ± 2.0</td>
<td>137 ± 1.5</td>
<td>126 ± 0.3</td>
</tr>
<tr>
<td>0.1</td>
<td>127 ± 1.2</td>
<td>115 ± 3.2</td>
<td>149 ± 1.7</td>
<td>133 ± 2.3</td>
</tr>
<tr>
<td>0.3</td>
<td>127 ± 0.9</td>
<td>108 ± 3.2</td>
<td>154 ± 1.8</td>
<td>134 ± 2.7</td>
</tr>
<tr>
<td>1.0</td>
<td>127 ± 1.7</td>
<td>113 ± 1.8</td>
<td>144 ± 0.9</td>
<td>142 ± 1.5</td>
</tr>
<tr>
<td>3.3</td>
<td>128 ± 1.3</td>
<td>113 ± 1.8</td>
<td>145 ± 2.3</td>
<td>135 ± 3.0</td>
</tr>
<tr>
<td>10.0</td>
<td>129 ± 0.9</td>
<td>114 ± 2.1</td>
<td>136 ± 1.0</td>
<td>125 ± 1.5</td>
</tr>
</tbody>
</table>

**Trial Summary**

- Negative

**Positive Control**

- 885 ± 3.8
- 882 ± 4.6
- 734 ± 5.4

**Test Type:** Genetic Toxicology - Bacterial Mutagenicity  
**Experiment Number:** A90714  
**Date Report Requested:** 09/15/2018  
**Time Report Requested:** 11:53:00
<table>
<thead>
<tr>
<th>Dose (μg/Plate)</th>
<th>With 30% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control</td>
<td>151 ± 1.5</td>
</tr>
<tr>
<td>0.1</td>
<td>150 ± 1.5</td>
</tr>
<tr>
<td>0.3</td>
<td>147 ± 1.5</td>
</tr>
<tr>
<td>1.0</td>
<td>152 ± 2.7</td>
</tr>
<tr>
<td>3.3</td>
<td>156 ± 1.2</td>
</tr>
<tr>
<td>10.0</td>
<td>153 ± 1.8</td>
</tr>
</tbody>
</table>

Trial Summary: Negative

Positive Control: 729 ± 3.5
### Strain: TA1535

<table>
<thead>
<tr>
<th>Dose (µg/Plate)</th>
<th>Without S9</th>
<th>Without S9</th>
<th>With 10% Rat S9</th>
<th>With 30% Rat S9</th>
<th>With 10% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control</td>
<td>17 ± 1.3</td>
<td>17 ± 0.9</td>
<td>17 ± 0.9</td>
<td>20 ± 1.5</td>
<td>17 ± 0.7</td>
</tr>
<tr>
<td>0.1</td>
<td>17 ± 0.9</td>
<td>17 ± 0.7</td>
<td>18 ± 0.9</td>
<td>21 ± 2.1</td>
<td>15 ± 0.9</td>
</tr>
<tr>
<td>0.3</td>
<td>17 ± 1.0</td>
<td>19 ± 0.6</td>
<td>15 ± 1.5</td>
<td>20 ± 1.2</td>
<td>17 ± 1.2</td>
</tr>
<tr>
<td>1.0</td>
<td>17 ± 1.8</td>
<td>18 ± 1.9</td>
<td>15 ± 1.0</td>
<td>18 ± 1.2</td>
<td>16 ± 0.3</td>
</tr>
<tr>
<td>3.3</td>
<td>17 ± 1.7</td>
<td>17 ± 1.5</td>
<td>17 ± 1.2</td>
<td>21 ± 1.7</td>
<td>16 ± 1.2</td>
</tr>
<tr>
<td>10.0</td>
<td>17 ± 0.9</td>
<td>17 ± 0.9</td>
<td>16 ± 0.7</td>
<td>18 ± 2.6</td>
<td>17 ± 1.3</td>
</tr>
</tbody>
</table>

**Trial Summary**
- Negative (Without S9)
- Negative (With 10% Rat S9)
- Negative (With 30% Rat S9)
- Negative (With 10% Hamster S9)

**Positive Control**
- 274 ± 4.8
- 238 ± 9.0
- 221 ± 4.9

**Test Compound:** Malachite green
**CAS Number:** 569-64-2

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Experiment Number: A90714
Test Type: Genetic Toxicology - Bacterial Mutagenicity

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G06: Ames Summary Data
Test Compound: Malachite green
CAS Number: 569-64-2

---

Date Report Requested: 09/15/2018
Time Report Requested: 11:53:00
### Strain: TA1535

<table>
<thead>
<tr>
<th>Dose (µg/Plate)</th>
<th>With 30% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control</td>
<td>14 ± 0.3</td>
</tr>
<tr>
<td>0.1</td>
<td>16 ± 1.2</td>
</tr>
<tr>
<td>0.3</td>
<td>16 ± 0.9</td>
</tr>
<tr>
<td>1.0</td>
<td>17 ± 1.0</td>
</tr>
<tr>
<td>3.3</td>
<td>17 ± 1.5</td>
</tr>
<tr>
<td>10.0</td>
<td>16 ± 1.7</td>
</tr>
</tbody>
</table>

**Trial Summary**: Negative

**Positive Control**
- 2
- 3

### Experiment Number: A90714
- **Test Type**: Genetic Toxicology - Bacterial Mutagenicity
- **Test Compound**: Malachite green
- **CAS Number**: 569-64-2

### Date Report Requested: 09/15/2018
- **Time Report Requested**: 11:53:00
<table>
<thead>
<tr>
<th>Dose (ug/Plate)</th>
<th>Without S9</th>
<th>Without S9</th>
<th>With 10% Rat S9</th>
<th>With 30% Rat S9</th>
<th>With 10% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control</td>
<td>118 ± 1.5</td>
<td>123 ± 1.5</td>
<td>153 ± 4.1</td>
<td>128 ± 2.1</td>
<td>127 ± 2.1</td>
</tr>
<tr>
<td>0.1</td>
<td>128 ± 0.7</td>
<td>121 ± 2.1</td>
<td>158 ± 3.5</td>
<td>125 ± 1.3</td>
<td>122 ± 1.2</td>
</tr>
<tr>
<td>0.3</td>
<td>126 ± 1.2</td>
<td>125 ± 0.9</td>
<td>146 ± 3.2</td>
<td>124 ± 1.5</td>
<td>124 ± 2.0</td>
</tr>
<tr>
<td>1.0</td>
<td>126 ± 1.0</td>
<td>127 ± 1.7</td>
<td>157 ± 2.0</td>
<td>134 ± 2.3</td>
<td>127 ± 1.2</td>
</tr>
<tr>
<td>3.3</td>
<td>124 ± 0.7</td>
<td>120 ± 2.4</td>
<td>137 ± 4.4</td>
<td>134 ± 0.6</td>
<td>125 ± 2.7</td>
</tr>
<tr>
<td>10.0</td>
<td>118 ± 1.3</td>
<td>126 ± 1.2</td>
<td>134 ± 3.8</td>
<td>127 ± 1.2</td>
<td>128 ± 1.9</td>
</tr>
</tbody>
</table>

Trial Summary
Negative
Negative
Negative
Negative
Negative

Positive Control
533 ± 22.3
462 ± 7.2
472 ± 6.7

Positive Control
387 ± 3.5
251 ± 5.9
### G06: Ames Summary Data

**Test Type:** Genetic Toxicology - Bacterial Mutagenicity  
**Test Compound:** Malachite green  
**CAS Number:** 569-64-2

<table>
<thead>
<tr>
<th>Dose (μg/Plate)</th>
<th>With 30% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control$^1$</td>
<td>130 ± 1.7</td>
</tr>
<tr>
<td>0.1</td>
<td>125 ± 1.9</td>
</tr>
<tr>
<td>0.3</td>
<td>128 ± 1.2</td>
</tr>
<tr>
<td>1.0</td>
<td>123 ± 0.6</td>
</tr>
<tr>
<td>3.3</td>
<td>125 ± 2.6</td>
</tr>
<tr>
<td>10.0</td>
<td>128 ± 0.9</td>
</tr>
</tbody>
</table>

**Trial Summary**  
Negative

**Positive Control$^2$**  
781 ± 4.6

**Positive Control$^4$**  
781 ± 4.6
<table>
<thead>
<tr>
<th>Dose (µg/Plate)</th>
<th>Without S9</th>
<th>Without S9</th>
<th>With 10% Rat S9</th>
<th>With 30% Rat S9</th>
<th>With 10% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control</td>
<td>46 ± 0.3</td>
<td>21 ± 0.6</td>
<td>37 ± 1.0</td>
<td>35 ± 2.0</td>
<td>34 ± 1.8</td>
</tr>
<tr>
<td>0.1</td>
<td>45 ± 2.1</td>
<td>25 ± 0.7</td>
<td>37 ± 3.3</td>
<td>32 ± 0.6</td>
<td>34 ± 1.2</td>
</tr>
<tr>
<td>0.3</td>
<td>44 ± 1.5</td>
<td>25 ± 2.0</td>
<td>39 ± 3.2</td>
<td>34 ± 1.5</td>
<td>36 ± 1.8</td>
</tr>
<tr>
<td>1.0</td>
<td>45 ± 1.0</td>
<td>28 ± 1.2</td>
<td>39 ± 1.2</td>
<td>36 ± 1.5</td>
<td>38 ± 1.2</td>
</tr>
<tr>
<td>3.3</td>
<td>47 ± 0.9</td>
<td>24 ± 2.1</td>
<td>41 ± 1.5</td>
<td>36 ± 1.8</td>
<td>38 ± 0.3</td>
</tr>
<tr>
<td>10.0</td>
<td>45 ± 1.3</td>
<td>20 ± 0.9</td>
<td>46 ± 0.7</td>
<td>36 ± 0.9</td>
<td>34 ± 1.5</td>
</tr>
</tbody>
</table>

Trial Summary

Negative

Positive Control

360 ± 3.5

442 ± 3.8

983 ± 6.7

Positive Control

285 ± 3.8

344 ± 9.6
### Strain: TA98

<table>
<thead>
<tr>
<th>Dose (µg/Plate)</th>
<th>With 30% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control 7</td>
<td>29 ± 0.6</td>
</tr>
<tr>
<td>0.1</td>
<td>27 ± 0.9</td>
</tr>
<tr>
<td>0.3</td>
<td>29 ± 0.3</td>
</tr>
<tr>
<td>1.0</td>
<td>31 ± 0.6</td>
</tr>
<tr>
<td>3.3</td>
<td>34 ± 1.5</td>
</tr>
<tr>
<td>10.0</td>
<td>33 ± 1.8</td>
</tr>
</tbody>
</table>

**Trial Summary**

Negative

**Positive Control**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Control 2</td>
<td>829 ± 2.6</td>
</tr>
<tr>
<td>Positive Control 5</td>
<td></td>
</tr>
</tbody>
</table>
### Strain: TA102

<table>
<thead>
<tr>
<th>Dose (µg/Plate)</th>
<th>Without S9</th>
<th>Without S9</th>
<th>With 10% Rat S9</th>
<th>With 30% Rat S9</th>
<th>With 10% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control</td>
<td>272 ± 2.1</td>
<td>284 ± 1.8</td>
<td>259 ± 2.0</td>
<td>337 ± 4.6</td>
<td>256 ± 2.6</td>
</tr>
<tr>
<td>0.1</td>
<td>282 ± 2.3</td>
<td>280 ± 1.8</td>
<td>257 ± 1.8</td>
<td>342 ± 4.5</td>
<td>250 ± 2.9</td>
</tr>
<tr>
<td>0.3</td>
<td>288 ± 1.8</td>
<td>290 ± 2.3</td>
<td>264 ± 2.2</td>
<td>336 ± 5.5</td>
<td>258 ± 2.7</td>
</tr>
<tr>
<td>1.0</td>
<td>267 ± 2.1</td>
<td>295 ± 2.3</td>
<td>274 ± 2.3</td>
<td>349 ± 4.7</td>
<td>259 ± 1.8</td>
</tr>
<tr>
<td>3.3</td>
<td>277 ± 3.1</td>
<td>300 ± 2.6</td>
<td>280 ± 1.7</td>
<td>357 ± 4.6</td>
<td>249 ± 2.0</td>
</tr>
<tr>
<td>10.0</td>
<td>271 ± 2.3</td>
<td>285 ± 2.4</td>
<td>259 ± 3.2</td>
<td>325 ± 3.4</td>
<td>260 ± 1.5</td>
</tr>
</tbody>
</table>

**Trial Summary**
- Negative
- Negative
- Negative
- Negative
- Negative

**Positive Control**
- 6: 1416 ± 14.2
- 7: 961 ± 2.3
- 6: 892 ± 3.6
- 7: 1027 ± 12.5
- 6: 831 ± 4.3
## Strain: TA102

<table>
<thead>
<tr>
<th>Dose (µg/Plate)</th>
<th>With 30% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control</td>
<td>266 ± 2.1</td>
</tr>
<tr>
<td>0.1</td>
<td>255 ± 2.6</td>
</tr>
<tr>
<td>0.3</td>
<td>274 ± 2.7</td>
</tr>
<tr>
<td>1.0</td>
<td>271 ± 2.4</td>
</tr>
<tr>
<td>3.3</td>
<td>282 ± 3.1</td>
</tr>
<tr>
<td>10.0</td>
<td>258 ± 1.9</td>
</tr>
</tbody>
</table>

**Trial Summary**

Negative

**Positive Control**

<table>
<thead>
<tr>
<th>Positive Control</th>
<th>759 ± 4.2</th>
</tr>
</thead>
</table>

**Experiment Number:** A90714  
**Test Type:** Genetic Toxicology - Bacterial Mutagenicity  
**Test Compound:** Malachite green  
**CAS Number:** 569-64-2  
**Date Report Requested:** 09/15/2018  
**Time Report Requested:** 11:53:00
## G06: Ames Summary Data

### Experiment Number: A90714

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

**Test Compound:** Malachite green  

**CAS Number:** 569-64-2  

**Date Report Requested:** 09/15/2018  

**Time Report Requested:** 11:53:00

**Strain:** TA104

<table>
<thead>
<tr>
<th>Dose (ug/Plate)</th>
<th>Without S9</th>
<th>Without S9</th>
<th>With 10% Rat S9</th>
<th>With 30% Rat S9</th>
<th>With 10% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control</td>
<td>279 ± 9.0</td>
<td>343 ± 2.3</td>
<td>276 ± 1.9</td>
<td>284 ± 2.6</td>
<td>280 ± 1.3</td>
</tr>
<tr>
<td>0.1</td>
<td>272 ± 2.0</td>
<td>349 ± 1.5</td>
<td>283 ± 2.1</td>
<td>288 ± 1.5</td>
<td>288 ± 2.8</td>
</tr>
<tr>
<td>0.3</td>
<td>289 ± 0.6</td>
<td>358 ± 2.0</td>
<td>281 ± 4.6</td>
<td>290 ± 1.8</td>
<td>277 ± 2.0</td>
</tr>
<tr>
<td>1.0</td>
<td>292 ± 1.2</td>
<td>364 ± 2.4</td>
<td>278 ± 4.1</td>
<td>286 ± 2.1</td>
<td>286 ± 1.3</td>
</tr>
<tr>
<td>3.3</td>
<td>289 ± 1.5</td>
<td>358 ± 2.6</td>
<td>282 ± 3.2</td>
<td>290 ± 2.6</td>
<td>273 ± 1.8</td>
</tr>
<tr>
<td>10.0</td>
<td>273 ± 1.8</td>
<td>348 ± 2.4</td>
<td>280 ± 1.7</td>
<td>289 ± 1.8</td>
<td>277 ± 2.2</td>
</tr>
</tbody>
</table>

**Trial Summary**  
Negative  
Negative  
Negative  
Negative  
Negative

**Positive Control**  

| Positive Control | 818 ± 6.5 | 1116 ± 4.9 |

**Positive Control**  

| 818 ± 6.5 | 1116 ± 4.9 |

**CAS Number:** 569-64-2
<table>
<thead>
<tr>
<th>Dose (ug/Plate)</th>
<th>With 30% Hamster S9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Control$^7$</td>
<td>284 ± 2.3</td>
</tr>
<tr>
<td>0.1</td>
<td>277 ± 4.1</td>
</tr>
<tr>
<td>0.3</td>
<td>286 ± 1.8</td>
</tr>
<tr>
<td>1.0</td>
<td>289 ± 1.3</td>
</tr>
<tr>
<td>3.3</td>
<td>299 ± 1.8</td>
</tr>
<tr>
<td>10.0</td>
<td>293 ± 1.8</td>
</tr>
</tbody>
</table>

Trial Summary

Negative

Positive Control$^8$  
1396 ± 3.8

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: Water
2: 1.0 ug/Plate 2-Aminoanthracene
3: 1.0 ug/Plate Sodium Azide
4: 50.0 ug/Plate 9-Aminoacridine
5: 1.0 ug/Plate 4-Nitro-O-Phenylenediamine
6: 5.0 ug/Plate Mitomycin-C
7: 100.0 ug/Plate Other Positive Control
8: 2.0 ug/Plate 2-Aminoanthracene

** END OF REPORT **