AMES II ASSAY: RESULTS OF A VALIDATION STUDY
Engelhardt G, Jacob E, Jäckh R
Department of Toxicology, BASF AG, DE-67056 Ludwigshafen/Rhein

A) AMES II ASSAY / METHOD

I. TEST SYSTEM
The Ames II assay of Xenometrix is a liquid microtiter modification of the traditional Ames test for the detection of potential mutagens in different test systems.

- Media and bacterial strains, except Salmonella, are available as a kit.
- The test is performed in microtiter plates.
- Mutagenicity (mutant frequency) is measured using a colorimetric endpoint (purple color changes were compared to a control band of bacteria).

IV. ADVANTAGES OF THE AMES II ASSAY

- Routine analysis
- High throughput screening (HTS) (~1,000 compounds/yearrobot/technician with a partly automated version)

B) AMES II ASSAY / VALIDATION STUDY

I. AIM
Validation of a high throughput screening version (HTS) of the Ames II assay of Xenometrix automated version or single replication without inclusion of the positive control strains was made in comparison with traditional Ames test replicates.

II. TEST COMPOUNDS
127 compounds (5 comparison) including different chemical classes were selected according to the criteria listed below:

- Mutagenicity in the Ames plate incorporation assay, positive in one or several test systems.
- Positive results in the Ames plate incorporation assay, negative in the Ames II assay.
- Positive results in the Ames plate incorporation assay, negative or uncertain in the Ames II assay.
- Positive results in the Ames plate incorporation assay, negative or uncertain in the Ames II assay.

III. RESULTS
1. COMPARISON OF THE TWO AMES TEST SYSTEMS: RESULTS OBTAINED WITH 127 COMPOUNDS

<table>
<thead>
<tr>
<th>STRAIN</th>
<th>MUTATION TYPE</th>
<th>GENOTYPE</th>
<th>STRAIN</th>
<th>MUTATION TYPE</th>
<th>GENOTYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ames II</td>
<td>Ames I</td>
<td>Ames II</td>
<td>Ames I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TA98</td>
<td>TA100</td>
<td>TA1535</td>
<td>TA98</td>
<td>TA100</td>
<td>TA1535</td>
</tr>
</tbody>
</table>

II. CONCLUSIONS

- The percentage of correctly identified mutagenic agents in different test systems was 32.8%.
- The percentage of correctly identified non-mutagenic agents in different test systems was 77.2%.
- The percentage of correctly identified mutagenic agents in different test systems was 87.2%.
- The percentage of correctly identified non-mutagenic agents in different test systems was 90.8%.

REFERENCES

Proudly distributed by ANIARA
+1 (513) 779-1901  +1 (513) 779-2797
7768 Service Center Drive
West Chester, OH 45069
info@aniara.com