## In Vitro Toxicology Kits

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Kit Name</th>
<th>Substrate</th>
<th>Parameter Measured</th>
<th>Test Method</th>
<th>Abs</th>
<th>.References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tox-1</td>
<td>MTT</td>
<td>(3-[4,5-Dimethylthiazol-2-yl]-2,5-diphenyltetrazolium bromide)</td>
<td>Cell viability by mitochondrial dehydrogenase</td>
<td>MTT is converted to an insoluble colored formazan derivative which is then solubilized in acidic isopropanol</td>
<td>570nm</td>
<td>1, 2, 3, 4, 5, 6</td>
</tr>
<tr>
<td>Tox-2</td>
<td>XTT</td>
<td>(2,3-bis[2-Methoxy-4-nitro-5-sulfophenyl]-2H-tetrazolium-5-carboxanilide)</td>
<td>Cell viability by mitochondrial dehydrogenase</td>
<td>XTT is converted to a water soluble colored formazan derivative</td>
<td>450nm</td>
<td>7, 8, 9</td>
</tr>
<tr>
<td>Tox-3</td>
<td>Acid Phosphatase</td>
<td>p-Nitrophenyl phosphate disodium</td>
<td>Biomass by membrane associated acid phosphatase activity (viable &amp; nonviable cells)</td>
<td>p-Nitrophenyl phosphate is converted to a colored compound by the acid phosphatase</td>
<td>405nm</td>
<td>10</td>
</tr>
<tr>
<td>Tox-4</td>
<td>Neutral Red</td>
<td>Neutral Red (3-Amino-7-dimethylamino-2-methylphenazine hydrochloride)</td>
<td>Viable cells as measured by uptake of the dye</td>
<td>Neutral red is taken up by viable cells and stored in the lysosomes. The dye is extracted and the uptake is quantitated by spectroscopy</td>
<td>540nm</td>
<td>11, 12, 13, 14, 15</td>
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<tr>
<td>Tox-5</td>
<td>Kenacid Blue</td>
<td>Brilliant Blue R (Coomassie® Blue-R)</td>
<td>Biomass by total protein</td>
<td>The dye binds to cellular protein and is then solubilized in acidic ethanol</td>
<td>570nm</td>
<td>16, 17</td>
</tr>
<tr>
<td>Tox-6</td>
<td>Sulforhodamine B</td>
<td>Sulforhodamine B</td>
<td>Biomass by total protein</td>
<td>The dye binds to cellular protein and is then solubilized in base</td>
<td>565nm</td>
<td>18, 19, 20</td>
</tr>
<tr>
<td>Tox-7</td>
<td>Lactate dehydrogenase (LDH)</td>
<td>Lactic Acid</td>
<td>Either membrane integrity or cell biomass by cytoplasmic lactate dehydrogenase</td>
<td>LDH reduces NAD+ which is then used to convert a tetrazolium dye to a soluble colored formazan derivative</td>
<td>490nm</td>
<td>21, 22</td>
</tr>
<tr>
<td>Tox-8</td>
<td>Resazurin</td>
<td>Resazurin</td>
<td>Metabolic activity of living cells</td>
<td>Bioreduction of the dye reduces the amount of its oxidized form (blue) and concomitantly increases the fluorescent intermediate (red)</td>
<td>690nm</td>
<td>23, 24, 25, 26</td>
</tr>
</tbody>
</table>

Coomassie Blue R is a trademark of ICI, PLC.

**Product Information**

**REFERENCES**