4,4'-Diaminodiphenyl ether (4,4'-ジアミノビフェニルエーテル)

**Chemical Name:** 4,4'-Diaminodiphenyl ether  
**Synonym:** Bis(4-aminophenyl)ether  
**Benzenamine, 4,4'-oxybis-**

**Molecular weight:** 200.24  
**Melting point:** 190.9°C  
**Boiling point:** °C

**Chemical Structure**

\[
\text{H}_2\text{N}-\text{O}-\text{O}-\text{NH}_2
\]

**CAS No:** 101-80-4  
**MITI No:** (3)-854  
**Source of Substance:** Tokyo Kasei Kogyo Co., Ltd.  
**Lot No:** AX01  
**Purity:** %  
**Vehicle:** DMSO

**Judgement for Chromosomal Aberration in CHL:** Positive

**IARC Evaluation:** G 2B

### Experimental Data

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Time (Hr)</th>
<th>Concentration (mg/ml)</th>
<th>Polyploidy Phase (%)</th>
<th>Cell with Structural Chromosome Aberration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMSO</td>
<td>24</td>
<td>200</td>
<td>0</td>
<td>Gap: 0, CTR: 0, CTE: 0, CSB: 0, CSE: 0, %G: 0, %+G: 0</td>
</tr>
<tr>
<td></td>
<td>48</td>
<td>200</td>
<td>0.5</td>
<td>Gap: 0, CTR: 0, CTE: 0, CSB: 0, CSE: 0, %G: 0, %+G: 0</td>
</tr>
</tbody>
</table>

**Test Chemical**

<table>
<thead>
<tr>
<th>Time (Hr)</th>
<th>Concentration (mg/ml)</th>
<th>Polyploidy Phase (%)</th>
<th>Cell with Structural Chromosome Aberration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>0.020</td>
<td>0</td>
<td>Gap: 0.5, CTR: 1.5, CTE: 0, CSB: 0, CSE: 0, %G: 1.5, %+G: 2</td>
</tr>
<tr>
<td></td>
<td>0.078</td>
<td>0</td>
<td>Gap: 0.1, CTR: 9.0, CTE: 0, CSB: 0, CSE: 0, %G: 10.0, %+G: 10</td>
</tr>
<tr>
<td></td>
<td>0.31</td>
<td>0</td>
<td>Gap: 4.0, CTR: 9.5, CTE: 45.0, CSB: 0.5, CSE: 0, %G: 50.0, %+G: 50</td>
</tr>
<tr>
<td></td>
<td>1.3</td>
<td>0</td>
<td>Gap: 2.0, CTR: 9.0, CTE: 45.0, CSB: 0, CSE: 0, %G: 48.5, %+G: 49</td>
</tr>
<tr>
<td></td>
<td>5.0</td>
<td>0</td>
<td>Gap: 4.5, CTR: 10.0, CTE: 39.5, CSB: 0, CSE: 0, %G: 45.0, %+G: 45</td>
</tr>
<tr>
<td>48</td>
<td>0.020</td>
<td>0.5</td>
<td>Gap: 0.5, CTR: 2.0, CTE: 0, CSB: 0, CSE: 0, %G: 2.5, %+G: 2.5</td>
</tr>
<tr>
<td></td>
<td>0.078</td>
<td>1.0</td>
<td>Gap: 0.5, CTR: 3.5, CTE: 32.0, CSB: 0, CSE: 0, %G: 34.5, %+G: 34.5</td>
</tr>
<tr>
<td></td>
<td>0.31</td>
<td>2.0</td>
<td>Gap: 1.5, CTR: 4.0, CTE: 58.5, CSB: 0, CSE: 0, %G: 59.0, %+G: 59</td>
</tr>
<tr>
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<td>1.3</td>
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<td>Gap: 2.5, CTR: 7.0, CTE: 58.5, CSB: 0, CSE: 0, %G: 59.0, %+G: 59</td>
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<tr>
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<td>5.0</td>
<td>2.5</td>
<td>Gap: 1.5, CTR: 6.0, CTE: 51.5, CSB: 0.5, CSE: 0, %G: 53.5, %+G: 53.5</td>
</tr>
</tbody>
</table>

**Positive Control**

<table>
<thead>
<tr>
<th>Time (Hr)</th>
<th>Concentration (mg/ml)</th>
<th>Polyploidy Phase (%)</th>
<th>Cell with Structural Chromosome Aberration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>0.00005</td>
<td>0.5</td>
<td>Gap: 3.5, CTR: 6.0, CTE: 39.0, CSB: 0, CSE: 0, %G: 42.5, %+G: 43.5</td>
</tr>
<tr>
<td>48</td>
<td>0.00005</td>
<td>0</td>
<td>Gap: 2.0, CTR: 10.0, CTE: 54.5, CSB: 0, CSE: 0, %G: 59.0, %+G: 59</td>
</tr>
</tbody>
</table>

Test chemical was precipitated at the concentration of 1.3 and 5.0mg/ml.
### Experimental Data

<table>
<thead>
<tr>
<th>S9 with or without (mg/ml)</th>
<th>Concentration</th>
<th>No. of Metaphase (%</th>
<th>Polyploid (%)</th>
<th>Cell with Structural Chromosome Aberration (%)</th>
<th>Total</th>
<th>+G</th>
<th>-G</th>
<th>Judge</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMSO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>-</td>
<td>200</td>
<td>0.5</td>
<td>-</td>
<td>0 0.5 1.0 0 0 1.5 1.5 -</td>
<td>0.5</td>
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<td></td>
<td>-</td>
</tr>
<tr>
<td>+</td>
<td>200</td>
<td>0</td>
<td>-</td>
<td>0 0 0.5 0 0 0.5 0.5 -</td>
<td>0.5</td>
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<tr>
<td><strong>Test Chemical</strong></td>
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<tr>
<td>-</td>
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<td>0</td>
<td>0 0.5 0.5 0 0 1.0 1.0 -</td>
<td>1.0</td>
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<tr>
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<td>200</td>
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<td>42.0</td>
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<td>0.5</td>
<td>1.0 6.5 30.0 0 0 33.5 33.5 +</td>
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<tr>
<td>+</td>
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<tr>
<td></td>
<td>0.19</td>
<td>200</td>
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<td>0 0 1.0 0 0 1.0 1.0 -</td>
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<tr>
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<td>1.5 5.5 32.5 0 0 35.5 35.5 +</td>
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<td>1.7</td>
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<td>0.5 2.0 17.0 0 0 18.5 19.0 +</td>
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<td></td>
<td>5.0</td>
<td>200</td>
<td>0.5</td>
<td>0.5 1.5 7.5 0 0.5 8.5 9.0 ±</td>
<td>8.5</td>
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<td>±</td>
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<tr>
<td><strong>Positive Control</strong></td>
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<tr>
<td>(B(a)P)</td>
<td>200</td>
<td>0</td>
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<td>0.5 0.5 0 0 0 0.5 1.0 -</td>
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<tr>
<td>+</td>
<td>200</td>
<td>0</td>
<td>-</td>
<td>3.0 5.0 43.0 0 0 45.0 45.5 +</td>
<td>45.0</td>
<td></td>
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<td>+</td>
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</tbody>
</table>

Test chemical was precipitated at the concentration of 1.7 and 5.0mg/ml.