Dibutyl phthalate

Cat. No.: HY-Y0304
CAS No.: 84-74-2
Molecular Formula: C₁₆H₂₂O₄
Molecular Weight: 278.34
Target: Others
Pathway: Others
Storage:
- Pure form: -20°C for 3 years, 4°C for 2 years
- In solvent: -80°C for 6 months, -20°C for 1 month

SOLVENT & SOLUBILITY

In Vitro

Ethanol: ≥ 50 mg/mL (179.64 mM)
* "≥" means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>3.5927 mL</td>
<td>17.9636 mL</td>
<td>35.9273 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.7185 mL</td>
<td>3.5927 mL</td>
<td>7.1855 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.3593 mL</td>
<td>1.7964 mL</td>
<td>3.5927 mL</td>
</tr>
</tbody>
</table>

Preparing Stock Solutions

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution

2. Add each solvent one by one: 10% EtOH >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution

3. Add each solvent one by one: 10% EtOH >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
Dibutyl phthalate is a commonly used plasticizer commonly found in some food packaging materials, personal care products, and the coating of oral medications[1]. May cause toxicity and adverse neurobehavioral effects[2][3].

In Vitro
Dibutyl phthalate (0.001 µg/mL-1000 µg/mL) is detrimental to follicle growth and viability and results in significant dysregulation of cell cycle and apoptosis gene expression in a dose-specific manner. But MBP does not play a role in
Dibutyl phthalate toxicity in follicles exposed in vitro\(^1\).

**In Vivo**

Dibutyl phthalate (200, 400, or 600 mg/kg/day) induces decrease mice weight, impairment of spermatogenesis, reduces serum follicle stimulating hormone and testosterone level, alters testicular LDH, increases LPO, and decreases the levels of enzymatic antioxidants with histopathological anomalies\(^2\).

Dibutyl phthalate (6.25, 12.5, 25, 50, 100 and 200 mg/kg) could cause some neurobehavioral adverse effects in mice\(^3\).

**REFERENCES**

