Tubulin inhibitor 1

Cat. No.: HY-112607
CAS No.: 2237054-53-2
Molecular Formula: C₂₁H₂₄N₂O₄
Molecular Weight: 368.43
Target: Microtubule/Tubulin; Apoptosis
Pathway: Cell Cycle/DNA Damage; Cytoskeleton; Apoptosis
Storage: Powder
-20°C 3 years
4°C 2 years
In solvent
-80°C 6 months
-20°C 1 month

SOLVENT & SOLUBILITY

In Vitro
DMSO : ≥ 125 mg/mL (339.28 mM)
* “≥” means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td></td>
<td>2.7142 mL</td>
<td>13.5711 mL</td>
<td>27.1422 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td></td>
<td>0.5428 mL</td>
<td>2.7142 mL</td>
<td>5.4284 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td></td>
<td>0.2714 mL</td>
<td>1.3571 mL</td>
<td>2.7142 mL</td>
</tr>
</tbody>
</table>

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

In Vivo
1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (5.65 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.65 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.65 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
Tubulin inhibitor 1 is a tubulin inhibitor, inhibits tubulin polymerization. Tubulin inhibitor 1 shows potent anti-tumor activity, causes cellular mitotic arrest in the G2/M phase, and induces cellular apoptosis\(^{[1]}\).

IC₅₀ & Target
Tubulin\(^{[1]}\)
In Vitro

Tubulin inhibitor 1 (Compound 7a3) is a tubulin inhibitor, inhibits tubulin polymerization [1]. Tubulin inhibitor 1 has potent anti-proliferative activity against SK-OV-3, MDA-MB-231, HeLa, A549, CT26 and MCF-7 cells, with IC$_{50}$s of 16.7 ± 3.0, 31.4 ± 0.7, 32.8 ± 2.9, 67.0 ± 0.8, 58.0 ± 2.4 and 35.4 ± 5.6 nM, respectively [1]. Tubulin inhibitor 1 (40, 80, and 160 nM, 48 hours) markedly causes cellular mitotic arrest in the G2/M phase, induces apoptosis in SK-OV-3 cells [1].

**Apoptosis Analysis [1]**

<table>
<thead>
<tr>
<th>Cell Line:</th>
<th>SK-OV-3 cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration:</td>
<td>40, 80, and 160 nM</td>
</tr>
<tr>
<td>Incubation Time:</td>
<td>48 h</td>
</tr>
<tr>
<td>Result:</td>
<td>Induced apoptosis in SK-OV-3 cells after treatment for 48 h.</td>
</tr>
</tbody>
</table>

In Vivo

Tubulin inhibitor 1 (50 mg/kg, i.p., every two days three times for 20-25 days) is well tolerated, significantly reduces tumour growth in Balb/c nude mice bearing SK-OV-3 cells [1].

**Animal Model:**
Six-week-old Balb/c nude mice (18-20 g) bearing SK-OV-3 cells [1]

**Dosage:**
50 mg/kg

**Administration:**
I.P., every two days three times for 20-25 days

**Result:**
Significantly reduced tumour growth in Balb/c nude mice bearing SK-OV-3 cells, without obvious body weight loss.

REFERENCES


Caution: Product has not been fully validated for medical applications. For research use only.
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