Verteporfin

Product Data Sheet

Cat. No.: HY-B0146
CAS No.: 129497-78-5
Molecular Formula: C₄₁H₄₂N₄O₈
Molecular Weight: 718.79
Target: YAP; Autophagy
Pathway: Stem Cell/Wnt; Autophagy
Storage: 4°C, protect from light

**Solvent & Solubility**

**In Vitro**

DMSO : 8 mg/mL (11.13 mM; Need ultrasonic)
H₂O : < 0.1 mg/mL (insoluble)

<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>1 mM</td>
<td></td>
<td></td>
<td>1.3912 mL</td>
<td>6.9561 mL</td>
<td>13.9123 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td></td>
<td>0.2782 mL</td>
<td>1.3912 mL</td>
<td>2.7825 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td></td>
<td>0.1391 mL</td>
<td>0.6956 mL</td>
<td>1.3912 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 >> 90% (20% SBE-β-CD in saline)
   Solubility: 0.8 mg/mL (1.11 mM); Suspended solution; Need ultrasonic and warming
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 0.8 mg/mL (1.11 mM); Clear solution

**BIOLOGICAL ACTIVITY**

**Description**

Verteporfin is a photosensitizer for photodynamic therapy to eliminate the abnormal blood vessels in the eye associated with conditions such as age-related macular degeneration. Verteporfin is a YAP inhibitor which disrupts YAP-TEAD interactions.

**In Vitro**

Verteporfin is specifically selected by PDX-cell screening. The concentrations to cause 50% growth inhibition (GI₅₀) for PhLO, PhLH, and PhLK are 228 nM, 395 nM, and 538 nM, respectively, whereas GI₅₀ for ALL-1, TCC-Y/sr, and NPhA1 are 3.93 µM, 2.11 µM, and 5.61 µM, respectively. GSH significantly reduces the sensitivity of 2 out of 3 PDX cells to verteporfin. Verteporfin reduces the mitochondrial membrane potential in PDX cells[1]. Verteporfin reduces the PTX-resistance on HCT-8/T cells by inhibiting YAP expression and combination therapy with verteporfin and paclitaxel (PTX) shows synergism on inhibition of YAP and cytotoxicity to HCT-8/T[2].
**In Vivo**

Verteporfin (10 mg/kg, c.s.c.) and dasatinib significantly reduces the leukemia cell ratio, and combined therapy further reduced the number of leukemia cells in the spleen\[1\].

**PROTOCOL**

**Cell Assay**\[1\]

PDX cells co-cultured with S17 cells are treated with 16 combinations of verteporfin (60 nM, 120 nM, 180 nM, and 240 nM) and dasatinib (12 nM, 24 nM, 36 nM, and 48 nM). The viabilities of cells treated with each combination are measured after 48 h using FACS Aria flow cytometer. In order to estimate drug interaction between verteporfin and dasatinib, a normalized isobologram and fraction affected combination index (CI) plot are made using CompuSyn software. CI values greater than 1.0 indicated antagonistic effects, equal to 1.0 additive effects, and below 1.0 synergistic effects.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**Animal Administration**\[1\]

Mice: PhLO cells (1.0×10\(^7\)/mouse) are injected intravenously into 6-week-old male NOG mice, which are then treated with vehicle, verteporfin (140 mg/kg/day), dasatinib (20 mg/kg/day), and a combination of these drugs from days 22 to 28. Verteporfin is administered by continuous subcutaneous infusion (c.s.c.) using Alzet osmotic pumps. An intraperitoneal injection (i.p.) is performed for dasatinib. All mice are sacrificed on day 28 and the chimerism of leukemia cells is investigated by flow cytometer using an anti-human CD19 antibody and antimouse CD45 antibody. Blood concentrations of verteporfin are calculated by LCMS-2020.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**CUSTOMER VALIDATION**


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**REFERENCES**


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

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