USP25/28 inhibitor AZ1

Cat. No.: HY-117370
CAS No.: 2165322-94-9
Molecular Formula: C₁₇H₁₆BrF₄NO₂
Molecular Weight: 422.21
Target: Deubiquitinase
Pathway: Cell Cycle/DNA Damage
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: ≥ 250 mg/mL (592.12 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>Mass (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>2.3685 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.4737 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.2368 mL</td>
</tr>
</tbody>
</table>

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (4.93 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.08 mg/mL (4.93 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.93 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
USP25/28 inhibitor AZ1 (AZ1) is an orally active, selective, noncompetitive, dual ubiquitin specific protease (USP) 25/28 inhibitor with IC₅₀ of 0.7 μM and 0.6 μM, respectively. USP25/28 inhibitor AZ1 attenuates colitis and tumorigenesis in the mice model[1][2].

IC₅₀ & Target
IC₅₀: 0.7 μM (USP25) and 0.6 μM (USP28)[1]
**In Vivo**

USP25/28 inhibitor AZ1 (AZ1; 40 mg/kg; gavage; daily; for 7 days) protects from dextran sulfate sodium (DSS)-induced weight loss and diarrhea and impaired colon shortening[1].

USP25/28 inhibitor AZ1 (20 mg/kg/day; gavage; 6 times a week in the 1, 3, 6 weeks) treatment significantly reduces tumor numbers in colons. Expression of Wnt-related genes and levels of pSTAT3 are decreased and levels of SOCS3 are increased in tumors. AZ1 gavage does not alleviate DSS-induced colitis in Usp25⁻/⁻ mice or the spontaneous colitis of Il10⁻/⁻ mice[1].

USP25/28 inhibitor AZ1 (20 mg/kg/day; gavage; every 3 days from 13-20 weeks) significantly inhibits tumorigenesis in the colon and prolonged the survival of AOM/Vil-Cre;Trp53enciasfl/fl (VP) mice. AZ1 treatment has minimal effect on tumorigenesis in the USP25-deficient background[1].

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

<table>
<thead>
<tr>
<th>Animal Model:</th>
<th>12-week old male Usp25⁺/+ and Usp25⁻/⁻ mice[1]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosage:</td>
<td>40 mg/kg</td>
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<tr>
<td>Administration:</td>
<td>Gavage; daily; for 7 days</td>
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<tr>
<td>Result:</td>
<td>Protected from dextran sulfate sodium (DSS)-induced weight loss and diarrhea and impaired colon shortening and potentiated the expression of proinflammatory cytokines and antibacterial peptides in colons of Usp25⁻/⁻ mice compared to control counterparts.</td>
</tr>
</tbody>
</table>

**REFERENCES**
