Evodiamine

Cat. No.: HY-N0114
CAS No.: 518-17-2
Molecular Formula: C_{19}H_{17}N_{3}O
Molecular Weight: 303.36
Target: Others
Pathway: Others
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: ≥ 37 mg/mL (121.97 mM)
* “≥” means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Mass Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>3.2964 mL</td>
<td>16.4821 mL</td>
<td>32.9641 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.6593 mL</td>
<td>3.2964 mL</td>
<td>6.5928 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.3296 mL</td>
<td>1.6482 mL</td>
<td>3.2964 mL</td>
</tr>
</tbody>
</table>

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

BIOLOGICAL ACTIVITY

Description
Evodiamine is an alkaloid isolated from the fruit of Evodia rutaecarpa Bentham with diverse biological activities including anti-inflammatory, anti-obesity, and antitumor.

In Vitro
Evodiamine shows cytotoxicity against a variety of human cancer cell-lines by inducing apoptosis. Moreover, it is a naturally multi-targeting antitumor molecule, which exerts the antitumor activity by various molecular mechanism such as caspase-dependent and -independent pathways, sphingomyelin pathway, calcium/JNK signaling, PI3K/Akt/caspase and Fas-L/NF-κB signaling pathways. Evodiamine shows cytotoxicity against a variety of human cancer cell-lines by inducing apoptosis. Moreover, it is a naturally multi-targeting antitumor molecule, which exerts the antitumor activity by various molecular mechanism such as caspase-dependent and -independent pathways, sphingomyelin pathway, calcium/JNK signaling, PI3K/Akt/caspase and Fas-L/NF-κB signaling pathways.

In Vivo
Evodiamine inhibits the metabolism of dapoxetine. Compared to the control group, the pharmacokinetic parameter of t1/2, AUC(0-∞) and Tmax of dapoxetine in evodiamine group is significantly increased by 63.3%, 44.8% and 50.4%, respectively. Moreover, evodiamine has significantly decreased the pharmacokinetic parameter of t1/2 and AUC(0-∞) of desmethyl dapoxetine. Evodiamine suppresses tumor growth in a subcutaneous H22 xenograft model. Evodiamine attenuates VEGF-induced angiogenesis in vivo.
### PROTOCOL

#### Cell Assay [1]

Evodiamine is dissolved in DMSO and diluted with appropriate medium before use. The evodiamine-inspired new scaffolds are assayed for growth inhibitory activities toward human cancer cell-lines A549 (lung cancer), MDA-MB-435 (breast cancer) and HCT116 (colon cancer) using the MTT assay. Evodiamine and camptothecin are used as reference drugs [1].

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

#### Animal Administration [2][3]

Rats: Twelve healthy male Sprague-Dawley rats are randomly divided into 2 groups: the control group (received oral 10 mg/kg dapoxetine alone) and the combination group (10 mg/kg dapoxetine orally co-administered with 100 mg/kg evodiamine). The plasma concentration of dapoxetine and desmethyl dapoxetine are estimated by ultra-performance liquid chromatography-tandem mass spectrometry (UPLC-MS/MS), and different pharmacokinetic parameters are calculated [2].

Mice: A nude mouse xenograft model is established by using 4–6-week-old male BALB/c nude mice. Mice are dosed daily with 20 mg/kg (10 mL/kg) of evodiamine intragastrically, six mice are dosed intraperitoneally with 10 mg/kg of 5-flurouracil (5-FU) twice a week, and six mice are not treated. The tumor volumes are determined by measuring two dimensions, with tumor volume = length × width × width/2. After 2 or 3 weeks of treatment, mice are sacrificed by cervical dislocation under anesthesia with ether, and the tumor tissues are collected [3].

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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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