Loureirin B

Cat. No.: HY-N1504
CAS No.: 119425-90-0
Molecular Formula: $C_{18}H_{20}O_5$
Molecular Weight: 316.35
Target: PAI-1; Potassium Channel; ERK; JNK
Pathway: Metabolic Enzyme/Protease; Membrane Transporter/Ion Channel; MAPK/ERK; Stem Cell/Wnt
Storage: Powder -20°C 3 years
4°C 2 years
In solvent -80°C 2 years
-20°C 1 year

SOLVENT & SOLUBILITY

In Vitro

DMSO: $\geq$ 150 mg/mL (474.16 mM)

* "$\geq$" 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>1 mM</td>
<td></td>
<td>3.1611 mL</td>
<td>15.8053 mL</td>
<td>31.6106 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td>0.6322 mL</td>
<td>3.1611 mL</td>
<td>6.3221 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td>0.3161 mL</td>
<td>1.5805 mL</td>
<td>3.1611 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 $\gg$ 40% PEG300 $\gg$ 5% Tween-80 $\gg$ 45% saline
Solubility: $\geq$ 2.5 mg/mL (7.90 mM); Clear solution

2. Add each solvent one by one: 10% DMSO $\gg$ 90% (20% SBE-β-CD in saline)
Solubility: $\geq$ 2.5 mg/mL (7.90 mM); Clear solution

3. Add each solvent one by one: 10% DMSO $\gg$ 90% corn oil
Solubility: $\geq$ 2.5 mg/mL (7.90 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
Loureirin B, a flavonoid extracted from Dracaena cochinchinensis, is an inhibitor of plasminogen activator inhibitor-1 (PAI-1), with an IC$_{50}$ of 26.10 μM; Loureirin B also inhibits K$_{ATP}$, the phosphorylation of ERK and JNK, and has anti-diabetic activity.

IC$_{50}$ & Target
IC$_{50}$: 26.10 μM (PAI-1)\cite{4}
### In Vitro

Loureirin B enhances the relative mRNA level of Pdx-1 and MafA. Loureirin B (1, 0.1, and 0.01 µM) increases insulin secretion in Ins-1 cells. Loureirin B (0.01 µM) almost causes no toxicity on cells. Loureirin B improves the level of expressions of MafA and Pdx-1 and ATP level. Loureirin B inhibits the KATP current but increases the \( [\text{Ca}^{2+}]_i \) level in Ins-1 cells\(^1\). Loureirin B inhibits the expression of Col1 and FN, as well as the TGF-β1-mediated up regulation of p-JNK. Loureirin B also inhibits the up regulation of p-ERK that is induced by TGF-β1\(^2\). Loureirin B downregulates both mRNA and protein levels of type I collagen, type III collagen and α-smooth muscle actin in a dose dependent manner in HS fibroblasts. Loureirin B also suppresses fibroblast proliferative activity and redistributes cell cycle, but does not affect cell apoptosis\(^3\).

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

### In Vivo

Loureirin B significantly improves the arrangement and deposition of collagen fibres, decreases protein levels of ColI, ColIII and α-SMA and suppresses myofibroblast differentiation and scar proliferative activity, in a rabbit ear scar model. Loureirin B effectively inhibits TGF-β1-induced upregulation of ColI, ColIII and α-SMA levels, myofibroblast differentiation and the activation of Smad2 and Smad3, in NS fibroblasts\(^3\).

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### PROTOCOL

#### Cell Assay\(^1\)

Ins-1 cells are seeded onto 96-well plates and cultured for 48 h to approximately 80-90% confluence. Then, the cells are starved in a 2% FBS/DMEM for 12 h. Control group is cultured in medium without loureirin B, while the positive control group is received fresh medium with glimepiride. After the treatment of loureirin B and glimepiride for 4 and 8 h, the cell viability is measured by Cell Counting Kit-8 (CCK-8).

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#### Animal Administration\(^3\)

For short, 10 adult New Zealand white male rabbits (2.0-2.5 kg b.w./each) are acclimated and housed under the standard 12-h light: 12-h dark cycle with free access of water and SPF basal diet. Rabbit is first anaesthetized with 1% pentobarbital (1.5 mg/kg b.w.), and then, a dermal punch biopsy (10×4 mm) is created down to bare cartilage on the ventral surface of each ear to outline a full-thickness wound. Four punch wounds are made on each ear of the eight rabbits. A dissecting microscope is used to ensure the complete removal of epidermis, dermis and perichondrium in each wound. Forty-eight hours after surgery, wounded rabbits are randomly divided into two groups with each being subcutaneously injected with DMSO solution (0.125% in PBS, 0.25 mL/kg b.w.) on the left ear or loureirin B solution (25 μg/mL in PBS, 0.25 mL/kg b.w.) on the right ear once every other day for total six times. Two rabbits are used for pilot experiment, four rabbits are sacrificed 14 days after injury (n = 4), and the rest four are sacrificed 28 days after injury (n=4). Two of the four scar tissues on the same ear are processed for Western blot, and the other two are used for Masson staining.

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### REFERENCES


