27-Hydroxycholesterol

Cat. No.: HY-N2371
CAS No.: 20380-11-4
Molecular Formula: C_{27}H_{46}O_{2}
Molecular Weight: 402.65
Target: Estrogen Receptor/ERR; LXR; Endogenous Metabolite
Pathway: Others; Metabolic Enzyme/Protease
Storage: Powder
-20°C 3 years
4°C 2 years
In solvent
-80°C 6 months
-20°C 1 month

**SOLVENT & SOLUBILITY**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Mass (mg/mL)</th>
<th>Concentration (mM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>10 mg/mL</td>
<td>1 mM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4835 mL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg</td>
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<tr>
<td></td>
<td></td>
<td>12.4177 mL</td>
</tr>
<tr>
<td>DMSO</td>
<td>1 mg/mL</td>
<td>10 mM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.4967 mL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4835 mL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.9671 mL</td>
</tr>
</tbody>
</table>

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

**IN VITRO**

1. Add each solvent one by one: 10% EtOH >> 90% corn oil
Solubility: ≥ 1 mg/mL (2.48 mM); Clear solution

**BIOLOGICAL ACTIVITY**

**Description**
27-Hydroxycholesterol is a selective estrogen receptor modulator and an agonist of the liver X receptor.

**IC_{50} & Target**
Human Endogenous Metabolite

**In Vitro**
27-Hydroxycholesterol is an endogenous selective estrogen receptor modulator that displays significant partial agonist activity in a variety of cellular models of estrogen receptor action. It positively regulates both gene transcription and cell proliferation in cellular models of breast cancer. 27-Hydroxycholesterol, through estrogen receptor activation, triggers deleterious effect in prostate cancer cell lines. 27-Hydroxycholesterol significantly increases cell proliferation of LNCaP and PC3 cells and this effect can be attenuated by estrogen receptor inhibitors. 27-Hydroxycholesterol is an oxysterol produced from cholesterol by the monoxygenase CYP27A1, which regulates...
intracellular cholesterol homeostasis. 27-Hydroxycholesterol also acts as an endogenous selective estrogen receptor modulator capable of increasing breast cancer growth and metastasis. 27-Hydroxycholesterol levels can be modulated by statins or direct inhibition of CYP27A1, thereby attenuating its pro-tumorigenic activities[3]. 27-hydroxylation of cholesterol is an important pathway for LXR activation in response to cholesterol overload[4].

**PROTOCOL**

**Cell Assay**

Stock solutions of 27-Hydroxycholesterol are prepared in 100% ethanol and stored at −80°C. 27-Hydroxycholesterol stock solution is dissolved in appropriate volumes of media to prepare the working solutions of 1 µM.

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

**Animal Administration [2]**

Proliferation assays are conducted on black 96 well plates using a commercial kit which quantifies cell number using DNA content and membrane integrity. LNCaP and PC3 cells are treated with 1 µM 27-Hydroxycholesterol for 48 hours[2].

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

**REFERENCES**


