Peretinoin

Cat. No.: HY-100008
CAS No.: 81485-25-8
Molecular Formula: C₂₀H₃₀O₂
Molecular Weight: 302.45
Target: RAR/RXR; SPHK; Autophagy; HCV
Pathway: Metabolic Enzyme/Protease; Immunology/Inflammation; Autophagy; Anti-infection
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: 50 mg/mL (165.32 mM; Need ultrasonic)
H₂O: < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>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>3.3063 mL</td>
<td>16.5317 mL</td>
<td>33.0633 mL</td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td>0.6613 mL</td>
<td>3.3063 mL</td>
<td>6.6127 mL</td>
<td></td>
</tr>
<tr>
<td>10 mM</td>
<td>0.3306 mL</td>
<td>1.6532 mL</td>
<td>3.063 mL</td>
<td></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 >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.27 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (8.27 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.27 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
Peretinoin is an oral acyclic retinoid retinoid with a vitamin A-like structure that targets retinoid nuclear receptors such as retinoid X receptor (RXR) and retinoic acid receptor (RAR). Peretinoin reduces the mRNA level of sphingosine kinase 1 (SPHK1) in vitro by downregulating a transcription factor, Sp1[1]. Peretinoin prevents the progression of non-alcoholic steatohepatitis (NASH) and the development of hepatocellular carcinoma (HCC)
through activating the autophagy pathway by increased Atg16L1 expression\[^2\]. Peretinoin inhibits HCV RNA amplification and virus release by altering lipid metabolism with an EC\(_{50}\) of 9 \(\mu\)M\[^3\].

<table>
<thead>
<tr>
<th>IC(_{50}) &amp; Target</th>
<th>RAR</th>
<th>RXR</th>
</tr>
</thead>
</table>

**In Vitro**

Peretinoin (5 \(\mu\)M; 24 hours) up-regulates the expression of LC3B-II and increases autophagy flux in mouse primary hepatocytes\[^2\].

Peretinoin (10-40 \(\mu\)M; 12-72 hours) exhibits suppressed SPHK1 expression after 24 h treatment, even at 10 \(\mu\)M and more prominent after 72 h peretinoin treatment \[^3\].

**Cell Autophagy Assay\[^2\]**

- **Cell Line:** Mouse primary hepatocytes (MPH) and the human HCC HepG2 cell line
- **Concentration:** 5 \(\mu\)M
- **Incubation Time:** 24 hours
- **Result:** Up-regulated the expression of LC3B-II and increased autophagy flux.

**Western Blot Analysis\[^1\]**

- **Cell Line:** Human hepatoma (Huh-7) cells
- **Concentration:** 10, 20 and 40 \(\mu\)M
- **Incubation Time:** 12, 24, 48 and 72 hours
- **Result:** Exhibited suppressed SPHK1 expression after 24 h treatment, even at 10 \(\mu\)M.

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**REFERENCES**


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**CUSTOMER VALIDATION**

- Antiviral Res. 2019 Jul 27;170:104570.

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

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