Eucalyptol

Cat. No.: HY-N0066
CAS No.: 470-82-6
Molecular Formula: C₁₀H₁₈O
Molecular Weight: 154.25
Target: 5-HT Receptor; Potassium Channel; Interleukin Related; TNF Receptor
Pathway: GPCR/G Protein; Neuronal Signaling; Membrane Transporter/Ion Channel; Immunology/Inflammation Apoptosis
Storage: Pure form -20°C 3 years
4°C 2 years
In solvent -80°C 6 months
-20°C 1 month

Solvent & Solubility

In Vitro 10 mM in DMSO

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>6.4830 mL</td>
<td>32.4149 mL</td>
<td>64.8298 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>1.2966 mL</td>
<td>6.4830 mL</td>
<td>12.9660 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.6483 mL</td>
<td>3.2415 mL</td>
<td>6.4830 mL</td>
</tr>
</tbody>
</table>

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

BIOLOGICAL ACTIVITY

Description
Eucalyptol is an inhibitor of 5-HT₃ receptor, potassium channel, TNF-α and IL-1β.

IC₅₀ & Target
5-HT₃ Receptor; IL-1β; TNF-α; potassium channel

In Vitro
Eucalyptol inhibits 5-HT-evoked currents in oocytes expressing 5-HT₃ receptors with an IC₅₀ of 258 µM[1]. Eucalyptol (Cin) treatment significantly decreases the ROS level in Aβ₂₅-₃₅ treated cells in a dose dependent manner. Eucalyptol treatment significantly decreases the NO level in Aβ₂₅-₃₅ treated cells in a dose dependent manner (p<0.05 and p<0.01). Eucalyptol treatment also significantly decreases IL-1β level in Aβ₂₅-₃₅ treated cells in a dose dependent manner (p<0.05 and p<0.01) as compare to Aβ₂₅-₃₅ treated PC12 cells. IL-6 level is also attenuated by Eucalyptol in dose dependent manner (p<0.05 and p<0.01) as compare to Aβ₂₅-₃₅ treated cells[3].

In Vivo
Results show that male and female rats treated with Eucalyptol (CIN) at the highest doses, 500 and 1000 mg/kg, have shown lower body weight than control group from the 7th to 50th day of treatment. The administration of Eucalyptol...
significantly reduces body weight gain of male rats (Eucalyptol 500 and 1000 mg/kg) and female rats (Eucalyptol 1000 mg/kg) in the first week of treatment. However, this reduction is followed by an increase in body weight of rats males and females treated with all doses of the second week until the end of treatment. For male rats, there is a significant increase of 6.93% in mean corpuscular volume (MCV) (Eucalyptol 1000 mg/kg) and of 43.54 and 38.98% in the platelet count (Eucalyptol 500 and 1000 mg/kg, respectively) and a decrease of 6.74 and 6.67% in mean corpuscular hemoglobin concentration (MCHC) (Eucalyptol 500 and 1000 mg/kg) and mean platelet volume (MPV) of 10.40, 10.60 and 15.73% (Eucalyptol 100, 500 and 1000 mg/kg, respectively), when compare to the control group.[4]

**PROTOCOL**

**Cell Assay** [3]

The protective dose of Eucalyptol (Cineole) is determined by MTT dye-uptake method. In brief, cells (1×10⁴ per well) are seeded in 96-well tissue culture plates and allowed to adhere for 24 h in CO₂ incubator at 37°C. Cells are differentiated for the indicated time period. Thereafter, the medium is replaced with the medium containing Eucalyptol (0 to 10 μM) in different experiments for a period up to 24 h. Tetrazolium bromide salt (5 mg/mL of stock in PBS) 10 μL/well is added in 100 mL of cell suspension and plate is incubated for 4 h. At the end of incubation period, the reaction mixture is carefully taken out and 200 μL of DMSO is added to each well by pipetting up and down several times until the content gets homogenized. The plates are kept on rocker shaker for 10 min at room temperature and then read at 550 nm using microplate reader[3].

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

**Animal Administration** [4]

Swiss mice are used in this experiment. The animals are randomly divided into two groups (n=5) and fasted overnight with free access to water. The group control receives a 1% Tween-80 aqueous solution (0.1 mL/10 g) and the other group is treated with Eucalyptol a single 2000 mg/kg dose by oral route. The animals are observed at 30, 60, 120, 180 and 240 min after oral treatment and daily for 14 days. Behavioral changes, weight, food and water consumption, clinical signs of toxicity or mortality are recorded daily[4].

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

**REFERENCES**


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