Eupatilin

Cat. No.: HY-N0783  
CAS No.: 22368-21-4  
Molecular Formula: C₁₈H₁₆O₇  
Molecular Weight: 344.32  
Target: PPAR; Autophagy  
Pathway: Cell Cycle/DNA Damage; Autophagy  
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 (145.21 mM; Need ultrasonic)  
H₂O : < 0.1 mg/mL (insoluble)  

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Mass (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mg</td>
<td>5 mg</td>
</tr>
<tr>
<td>1 mM</td>
<td>2.9043 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.5809 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.2904 mL</td>
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</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 (7.26 mM); Clear solution

BIOLOGICAL ACTIVITY

Description  
Eupatilin, a lipophilic flavonoid isolated from Artemisia species, is a PPARα agonist, and possesses anti-apoptotic, anti-oxidative and anti-inflammatory activities.

IC₅₀ & Target  
PPARα

In Vitro  
Eupatilin is a PPARα agonist. Eupatilin (10, 30, 100 μM) suppresses IL-4 expression and degranulation in RBL-2H3 cells [1]. Eupatilin (50-100 μM) slightly reduces cell viability of HaCaT cells. Eupatilin (10, 30, 50, 100 μM) increases PPARα transactivation and expression in HaCaT cells. Eupatilin (10, 30, 50 μM) also suppresses TNFα-induced MMP-2/-9 expression in HaCaT cells. Furthermore, Eupatilin inhibits TNFα-induced p65 translocation, IκBα Phosphorylation, AP-1 and MAPK signaling via PPARα[2]. Eupatilin (10-50 μM) shows no cytotoxic effects on ARPE19 cells. Eupatilin (10, 25,
50 μM) elevates cell viability from oxidative stress, and inhibits H2O2-induced ROS production in ARPE19 cells. Moreover, Eupatilin (50 μM) inhibits H2O2-induced cells apoptosis and promotes the activation of PI3K/Akt pathway in RPE cells\[3\].

**In Vivo**

Eupatilin (1.5% or 3.0%) restores PPARα mRNA expression, and improves atopic dermatitis (AD)-like symptoms in oxazolone-induced Balb/c mice. Eupatilin causes significant decrease in serum IgE, IL-4 levels, oxazolone-induced TNF α, IFNγ, IL-1β, TSLP, IL-33 and IL-25 mRNA expression in oxazolone-induced mice. Eupatilin also increases filaggrin and loricrin mRNA expression in oxazolone-induced mice\[1\].

### PROTOCOL

#### Cell Assay \[3\]

Cell viability is detected using a MTT assay. In brief, after treatment, the medium is replaced with fresh medium containing 0.5 mg/mL MTT for 4 h at 37°C. Then, the medium is gently aspirated and 150 μL of DMSO is added to each well to solubilize the formazan crystals. The absorbance is measured at 450 nm by a microplate reader. The relative cell viability is defined as the absorbance of treated wells divided by that of the control \[3\].

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

#### Animal Administration \[1\]

**Six-week-old female Balb/c mice** are housed under conditions of controlled temperature (23 ± 2 °C), humidity (55 ± 5%), and 12 h light/dark cycles (06:00-18:00 h light, 18:00-06:00 dark). Briefly, Balb/c mice are sensitized on day −7 by a single application of 20 μL of 1.0% oxazolone in a mixture of acetone and olive oil (4:1) to the inner and outer surface of both ears. On day 0, the mouse ears are challenged with 20 μL of 0.1% oxazolone at 2-day intervals for 4 weeks post-sensitization. The mice are treated with the indicated concentrations of Eupatilin (1.5% or 3.0%) twice a day for 4 weeks. The control group is treated with vehicle alone (acetone and olive oil [4:1]). After 3 weeks, the mice are sacrificed and samples are collected. Ears are stored at −80°C for RNA isolation and analysis or immediately fixed in 4% formalin for histological analysis\[1\].

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

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### REFERENCES


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