ITE

Cat. No.: HY-19317
CAS No.: 448906-42-1
Molecular Formula: C₄H₁₀N₂O₃S
Molecular Weight: 286.31
Target: Aryl Hydrocarbon Receptor
Pathway: Immunology/Inflammation
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 : ≥ 41 mg/mL (143.20 mM)
H₂O : < 0.1 mg/mL (insoluble)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>3.4927 mL</td>
<td>17.4636 mL</td>
<td>34.9272 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.6985 mL</td>
<td>3.4927 mL</td>
<td>6.9854 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.3493 mL</td>
<td>1.7464 mL</td>
<td>3.4927 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 >> 90% corn oil
   Solubility: ≥ 2.67 mg/mL (9.33 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
ITE is a potent endogenous agonist of aryl hydrocarbon receptor (AhR), binding directly to AHR, with a Kᵢ of 3 nM. ITE also has immunosuppressive activity.

IC₅₀ & Target
Ki: 3 nM (AhR)[¹]

In Vitro
ITE is an endogenous agonist of AhR, binding directly to AHR, with a Kᵢ of 3 nM[¹]. ITE (0.03-30 mg/mL) decreases the antigen-specific T-cell proliferative responses[²]. ITE potently inhibits human pulmonary artery endothelial (HPAECs) growth at 10 and 20 µM, but shows no effect at 0.01-5 µM. ITE does not affect cell cycle progress of HPAECs at 10 and 20 µM, or induce expression of cleaved caspase-3 protein in HPAECs at 20 µM. In addition, ITE (20 µM) elevates
CYP1A1 and CYP1B1 mRNA levels and decreases the levels of AhR protein in HPAECs[3].

In Vivo
ITE (200 µg, i.p.) significantly suppresses the development of experimental autoimmune uveitis (EAU) in mice. ITE reduces the proportions of cells expressing IFN-γ, IL-17, or IL-10 in mice. ITE also suppresses the secretion of inflammatory cytokines by LN cells in mice[2].

PROTOCOL

Cell Assay [3]
Subconfluent cells (25,000 cells/well) are seeded in 96-well plates. Cells are treated with ITE at 5, 10 and 20 µM or DMSO (0.1% v/v) in ECM for 2, 4 or 6 days with a change of ECM containing DMSO or ITE every other day (5 wells/treatment). At the end of treatment, cells are incubated with MTT reagent for 4 hr, and solubilized in crystal dissolving solution (100 µL/well) for 20 min. The absorbance is determined at 570 nm using the microplate reader[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Administration [2]

Eight- to 12-week-old female B10.A mice is used in the assay. Daily treatment starts on day 0 and consists of 200 µg of ITE suspended in 0.2 mL PBS, given intraperitoneally. Control mice are similarly treated with 0.2 mL of the vehicle, PBS containing 3.6% DMSO[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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REFERENCES

