Xanthurenic acid

Cat. No.: HY-W014666
CAS No.: 59-00-7
Molecular Formula: C₁₀H₇NO₄
Molecular Weight: 205.17

Target: Endogenous Metabolite; mGluR; Apoptosis
Pathway: Metabolic Enzyme/Protease; GPCR/G Protein; Neuronal Signaling; Apoptosis

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: 5 mg/mL (24.37 mM; Need ultrasonic and warming)

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Concentration</th>
<th>Solvent Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td></td>
<td>4.8740 mL</td>
<td>24.3700 mL</td>
<td>48.7401 mL</td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td>0.9748 mL</td>
<td>4.8740 mL</td>
<td>9.7480 mL</td>
<td></td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td>0.4874 mL</td>
<td>2.4370 mL</td>
<td>4.8740 mL</td>
<td></td>
</tr>
</tbody>
</table>

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

BIOLOGICAL ACTIVITY

Description
Xanthurenic acid is a putative endogenous Group II metabotropic glutamate receptor agonist, on sensory transmission in the thalamus.

IC₅₀ & Target

<table>
<thead>
<tr>
<th>In Vitro</th>
<th>Human Endogenous Metabolite</th>
<th>mGluR2</th>
<th>mGluR3</th>
</tr>
</thead>
</table>

In Vivo
Xanthurenic acid is a putative endogenous Group II metabotropic glutamate receptor agonist, on sensory transmission in the thalamus. The inhibition of Xanthurenic acid (XA) on sensory can be found when applied iontophoretically and i.v., is similar to that of other Group II mGlu receptor agonists in reducing inhibition evoked in the VB from the thalamic reticular nucleus upon physiological sensory stimulation. Furthermore, it is postulated that Xanthurenic acid may be the first potential endogenous allosteric agonist for the mGlu receptors. As the Group II receptors and kynurenine metabolism pathway have both been heavily implicated in the pathophysiology of schizophrenia, Xanthurenic acid could play a pivotal role in antipsychotic research as this potential endocoid represents both a convergence within these two biological parameters and a novel class of Group II mGlu receptor
Male Wistar rats (265-495 g, n=27) are used throughout the study. Throughout the experiments, electrocardiogram and electroencephalogram (EEG) are monitored. Iontophoretic drug applications are performed using the outer barrels, with one of the outer barrels filled with 1 M NaCl for current balancing on each occasion. The remaining outer barrels contain one of the following substances as required: NMDA (50 mM, pH 8.0 in 150 mM NaCl), LY354740 (5 mM, pH 8.0 in 75 mM NaCl), Xanthurenic Acid (5 mM, pH 8.0 in 75 mM NaCl), LY341495 (5 mM, pH 8.5 in 75 mM NaCl), as Na salts, ejected as anions, and LY487379 (1 mM, pH 6.0, in 1% dimethyl sulfoxide, 75 mM NaCl), ejected as cations. All compounds are prevented from diffusing out of the pipette by using a retaining current (15-25 nA) of opposite polarity to that of the ejection current[1].

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

REFERENCES