Product Data Sheet

Chemical Properties

Product Name: Tolcapone
Cas No.: 134308-13-7
M.Wt.: 273.24
Formula: C14H11NO5
Synonyms: Ro 40-7592, Ro-40-7592
Chemical Name: (3,4-dihydroxy-5-nitrophenyl)-(4-methylphenyl)methanone
Canonical SMILES: CC1=CC=C(C=C1)C(=O)C2=CC(=C(C(=C2)O)O)[N+](-O)[O-]
Solubility: Soluble in DMSO > 10 mM
Storage: Store at -20°C
General tips: For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Shopping Condition: Evaluation sample solution: ship with blue ice
All other available size: ship with RT, or blue ice upon request

Biological Activity

Targets: Transferase
Pathways: Metabolism >> Transferase
Description:
Tolcapone is a novel, reversible and orally-bioavailable small-molecule catechol-O-methyltransferase (COMT) inhibitor used for as an adjunct to levodopa therapy for the treatment of Parkinson’s disease (PD). The chemical structure of tolcapone contains a catechol structure with two electron withdrawing substituents of a tendency to easily deliver a proton resulting in an anion that is highly affinitive for COMT (the value of 50% inhibition concentration IC50 of 36 nM in rat liver) and displaces other catechols (such as catecholamines and levodopa) from the COMT catalytic center to prevent methylation. Study results have that...
the use of tolcapone reduces the dosage but enhances the therapeutic effects of levodopa to control PD symptoms.

**Reference:**

### Protocol

#### Cell experiment:

<table>
<thead>
<tr>
<th>Cell lines</th>
<th>SH-SY5Y neuroblastoma cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation method</td>
<td>Soluble in DMSO &gt; 10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20 °C for several months.</td>
</tr>
<tr>
<td>Reacting conditions</td>
<td>6 days</td>
</tr>
<tr>
<td>Applications</td>
<td>Tolcapone as an inhibitor of COMT shows a protective effect against HIV associated dendritic and synaptic damage.</td>
</tr>
</tbody>
</table>

#### Animal experiment [3]:

<table>
<thead>
<tr>
<th>Animal models</th>
<th>Male albino rats (Fii-albino, 270-300 g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosage form</td>
<td>Orally in a final volume of 2 ml/kg.</td>
</tr>
<tr>
<td>Applications</td>
<td>Tolcapone is very effective in increasing the striatal extracellular levels of L-DOPA and dopamine in the rat, when given in combination with L-DOPA+benserazide.</td>
</tr>
<tr>
<td>Preparation method</td>
<td>Suspended in saline containing 1% Tween 80 using a glass homogenizer.</td>
</tr>
<tr>
<td>Other notes</td>
<td>Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.</td>
</tr>
</tbody>
</table>
Reference:
2. Lee TT, Chana G, Gorry PR etc. Inhibition of catechol-O-methyl transferase (COMT) by tolcapone restores reductions in microtubule-associated protein 2 (MAP2) and synaptophysin (SYP) following exposure of neuronal cells to neurotropic HIV. J Neurovirol. 2015 Jun 3.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Short-term storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

ApexBio Technology

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