Dasotraline hydrochloride

Cat. No.: HY-12850A
CAS No.: 675126-08-6
Molecular Formula: C₁₆H₁₆Cl₃N
Molecular Weight: 328.66
Target: Serotonin Transporter; Dopamine Transporter
Pathway: Neuronal Signaling
Storage:
- Powder: -20°C 3 years, 4°C 2 years
- In solvent: -80°C 6 months, -20°C 1 month

Solvent & Solubility

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Mass (mM)</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMSO</td>
<td>≥ 31 mg/mL (94.32 mM)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Preparation of 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>3.0427 mL</td>
<td>15.2133 mL</td>
<td>30.4266 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.6085 mL</td>
<td>3.0427 mL</td>
<td>6.0853 mL</td>
</tr>
</tbody>
</table>

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

BIOLOGICAL ACTIVITY

Description

Dasotraline hydrochloride (SEP-225289 hydrochloride) is a triple reuptake inhibitor that blocks dopamine, norepinephrine, and serotonin transporters with IC₅₀ values of 4, 6, and 11 nM, respectively.

IC₅₀ & Target

IC₅₀: 4 nM (dopamine), 6 nM (norepinephrine), 11 nM (serotonin)[¹]

In Vivo

Acute administration of dasotraline dose-dependently decreases the spontaneous firing rate of LC NE, VTA DA and DR 5-HT neurons through the activation of α2, D2 and 5-HT1A autoreceptors, respectively. Dasotraline predominantly inhibits the firing rate of LC NE neurons while producing only a partial decrease in VTA DA and DR 5-HT neuronal discharge. SEP-225289 is equipotent at inhibiting 5-HT and NE transporters since it prolongs to the same extent the time required for a 50% recovery of the firing activity of dorsal hippocampus CA3 pyramidal neurons from the inhibition induced by microiontophoretic application of 5-HT and NE[¹]. Average dopamine and serotonin transporter occupancies increase with increasing doses of SEP-225289. Mean dopamine and serotonin transporter occupancies are 33%±11% and 2%±13%, respectively, for 8 mg; 44%±4% and 9%±10%, respectively, for 12 mg; and
49%±7% and 14%±15%, respectively, for 16 mg[2].

REFERENCES
