L-655708

Cat. No.: HY-14426
CAS No.: 130477-52-0
Molecular Formula: $C_{18}H_{19}N_{3}O_{4}$
Molecular Weight: 341.36
Target: GABA Receptor
Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:
- Powder: -20°C for 3 years, 4°C for 2 years
- In solvent: -80°C for 6 months, -20°C for 1 month

**SOLVENT & SOLUBILITY**

**In Vitro**
DMSO : 20 mg/mL ($58.59 \text{ mM}$; Need ultrasonic)
$H_2O$ : < 0.1 mg/mL (insoluble)

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td></td>
<td>2.9295 mL</td>
<td>14.6473 mL</td>
<td>29.2946 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td></td>
<td>0.5859 mL</td>
<td>2.9295 mL</td>
<td>5.8589 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td></td>
<td>0.2929 mL</td>
<td>1.4647 mL</td>
<td>2.9295 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 $>>$ 40% PEG300 $>>$ 5% Tween-80 $>>$ 45% saline
Solubility: $\geq 2 \text{ mg/mL (5.86 mM)}$; Clear solution

**BIOLOGICAL ACTIVITY**

Description
L-655708 is a potent $\alpha5$ subunit-selective GABAA receptor inverse agonist ($Ki = 0.45 \text{ nM}$). IC50: 0.45 nM ($Ki$) Target:
GABA in vitro: L-655708 is a potent, selective inverse agonist for the benzodiazepine site of GABAA receptors containing the $\alpha5$ subunit ($Ki = 0.45 \text{ nM}$). Displays 50-100-fold selectivity over GABAA receptors containing $\alpha1$, $\alpha2$, $\alpha3$ or $\alpha6$ subunits in combination with $\beta3$ and $\gamma2$. Enhances LTP in a mouse hippocampal slice model and increases spatial learning, without displaying proconvulsant activity.
In vivo: L-655708 at 0.7 mg/kg, administered intraperitoneally, would result in 60-70% occupancy of $\alpha5$ GABAA receptors with limited binding to $\alpha1$, $\alpha2$, and $\alpha3$ subunit-containing GABAA receptors and no significant off-target behavioral effects, such as sedation and motor impairment.[1]