**JNJ16259685**

**Cat. No.:** HY-100407  
**CAS No.:** 409345-29-5  
**Molecular Formula:** C₂₀H₂₃NO₃  
**Molecular Weight:** 325.4  
**Target:** mGluR  
**Pathway:** GPCR/G Protein; Neuronal Signaling  
**Storage:**  
- Powder: -20°C, 3 years; 4°C, 2 years; In solvent: -80°C, 6 months; -20°C, 1 month

### SOLVENT & SOLUBILITY

#### In Vitro

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Solvent</th>
<th>Mass (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>DMSO</td>
<td>3.0731</td>
</tr>
<tr>
<td>5 mM</td>
<td>DMSO</td>
<td>15.3657</td>
</tr>
<tr>
<td>10 mM</td>
<td>DMSO</td>
<td>30.7314</td>
</tr>
</tbody>
</table>

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions:

1. **10 mM DMSO**
   - Mass: 0.3073 mL
   - Concentration: 3.0731 mM
   - In solvent: -80°C, 6 months; -20°C, 1 month

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: ≥ 2.75 mg/mL (8.45 mM); Clear solution

2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   - Solubility: ≥ 2.75 mg/mL (8.45 mM); Clear solution

3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   - Solubility: ≥ 2.75 mg/mL (8.45 mM); Clear solution

### BIOLOGICAL ACTIVITY

**Description**

JNJ16259685 is a selective antagonist of mGlu1 receptor, and inhibits the synaptic activation of mGlu1 in a concentration-dependent manner with IC₅₀ of 19 nM.

**IC₅₀ & Target**

IC₅₀: 19 nM (mGlu1)
**In Vitro**

JNJ16259685 potently and completely inhibits the glutamate (30 μM)-induced increase in intracellular Ca\textsuperscript{2+} concentrations at the rat mGlu1a receptor with an IC\textsubscript{50} value of 3.24±1.00 nM. IC\textsubscript{50} values for CPCCOEt and BAY 36-7620 are 17.8±10.3 μM and 161±38 nM, respectively. The potency of JNJ16259685 in blocking glutamate (30 μM)-induced Ca\textsuperscript{2+} mobilization at the human mGlu1a receptor is 1.21±0.53 nM (IC\textsubscript{50} n=3). JNJ16259685 inhibits the glutamate (3 μM)-induced rise in intracellular Ca\textsuperscript{2+} concentrations at the rat mGlu5a receptor with an IC\textsubscript{50} value of 1.31±0.39 μM (n=4). JNJ16259685 blocks glutamate (3 μM)-induced Ca\textsuperscript{2+} mobilization at the human mGlu5 receptor with an IC\textsubscript{50} of 28.3±11.7 μM (n=4). JNJ16259685 does not exhibit agonist activity at any of the group I mGlu receptors\cite{3}.

**In Vivo**

JNJ16259685 (0.125, 0.25, 0.5, 1, 2, 4 and 8 mg/kg, i.p) significantly reduces the time spent in digging behaviours (0.25-8 mg/kg), threat (all doses) and attack, in comparison with vehicle group\cite{1}. JNJ16259685 (30 mg/kg) produces very minimal effects on locomotor activity. JNJ16259685 dramatically reduces rearing behavior, exploration of a novel environment and lever pressing for a food reward (rat: 0.3 mg/kg; mouse: 1 mg/kg). Subcutaneously administered JNJ16259685 (30 mg/kg) has no effect on reflexive startle responses to loud auditory stimuli or foot shock in mice\cite{2}. JNJ16259685 exhibits high potencies in occupying central mGlu1 receptors in the rat cerebellum and thalamus (ED\textsubscript{50} =0.040 and 0.014 mg/kg, respectively)\cite{3}.

**PROTOCOL**

**Animal Administration**\cite{1}\cite{2}

Mice\cite{1}

Nine groups of mice are used. Animals are randomly allocated to two control groups (n=15 each) receiving only saline or saline (90%) plus DMSO (10%), and seven experimental groups (N=14-16 each) receiving JNJ16259685 injections. JNJ16259685 is diluted in saline (90%) plus DMSO (10%) to provide appropriate doses for injections and administered in seven doses: 0.125, 0.25, 0.5, 1, 2, 4 and 8 mg/kg. The doses are chosen on the basis of recent behavioural studies using this compound. Drug or vehicle is injected intraperitoneally in a volume of 10 mL/kg.

Rats\cite{2}

This procedure is used to measure overt behavioral, neurological and autonomic responses to the drug challenge. Briefly, rats are randomly separated into four groups (n=6), each of which receives a different dose (0, 3, 10, or 30 mg/kg) of JNJ16259685. An expert observer, blind to the drug treatment of the animals, assesses and scores the animals at 30, 60, 120, and 240 min post-injection. The animals are assessed for passivity, body elevation, limb position, limb tone, body tone, gait, and pupil size. For each of these behaviors, a score of 0 is assigned to animals that appeared “normal”, whereas scores of ±1, ±2, or ±3 indicated mild, moderate, or severe increases (+) or decreases (−) from normality. Individual animals that receive a score of ±2, or greater, are considered to be significantly effected on the measure. A dose is considered to have a significant effect if 3 or more of the animals receive a score of greater than ±2.

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

**REFERENCES**


Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898          Fax: 609-228-5909          E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA