**Product Data Sheet**

**Chemical Properties**

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>Olanzapine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cas No.:</td>
<td>132539-06-1</td>
</tr>
<tr>
<td>M.Wt:</td>
<td>312.43</td>
</tr>
<tr>
<td>Formula:</td>
<td>C17H20N4S</td>
</tr>
<tr>
<td>Chemical Name:</td>
<td>2-methyl-4-((4-methylpiperazin-1-yl)-5H-thieno[3,2-c][1,5]benzodiazepine</td>
</tr>
<tr>
<td>Canonical SMILES:</td>
<td>CC1=CC2=C(NC3=CC=CC=C3N=C2S1)N4CCN(CC4)C</td>
</tr>
<tr>
<td>Solubility:</td>
<td>≥15.6mg/mL in DMSO</td>
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<tr>
<td>Storage:</td>
<td>Store at -20°C</td>
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<tr>
<td>General tips:</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Shopping Condition:**

- Evaluation sample solution: ship with blue ice
- All other available size: ship with RT, or blue ice upon request

**Biological Activity**

**Targets:** Neuroscience

**Pathways:** 5-HT Receptor

**Description:**

Olanzapine is a high affinity for 5-HT2 serotonin and D2 dopamine receptor antagonist. The 5-HT2 serotonin and D2 dopamine receptor s are subfamily of G protein-coupled receptors (GPCRs) [1].

In vitro: Binding studies showed that olanzapine interacted with key receptor sof interest in schizophrenia, exhibiting a nanomolar affinity for dopaminergic, serotonergic, alpha 1-adrenergic, and muscarinic receptors [1].

In vivo: Olanzapine was a potent antagonist at DAreceptors and 5-HT receptors, but showed
weaker activity at alpha-adrenergic and muscarinic receptors [1]. Administration of Olanzapine at 0.5, 3 and 10 mg/kg (s.c.) increased the extracellular dopamine (DA) and norepinephrine (NE) levels in all three brain areas in a dose-dependent manner. The increases reached peaks 60-90 min after olanzapine administration and lasted for at least 2 h. The highest DA increases in the Acb and Cpu were induced by olanzapine at 3 mg/kg but at 10 mg/kg in the Pfc while the highest NE increase in the Pfc (414% ± 40) induced by 10 mg/kg olanzapine [2]. In macaque monkeys, olanzapine treatment resulted in an 8-11% reduction in mean fresh brain weights as well as left cerebrum fresh weights and volumes [3].

Reference:

Protocol

Cell experiment:

Cell lines U87MG and A172 human glioblastoma cell line

Preparation method The solubility of this compound in DMSO is >15.6mg/mL. 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.

Reacting conditions

Applications Treatment with olanzapine inhibited the proliferation of established glioblastoma cell lines and enhanced the antiproliferative effect of temozolomide on U87MG and A172 cells. Olanzapine (20 μM, 40 μM) inhibited anchorage-independent growth of U87MG cells. Treatment with olanzapine (50 μM, 100 μM) inhibited the migration of A172MG cells. Olanzapine (144 h) exerted proapoptotic and necrotizing effects on glioblastoma cell lines. Olanzapine yielded a significant cytostatic effect on A172 glioblastoma cells.

Animal experiment [3]:
**Animal models**

Rats

**Dosage form**

Subcutaneous injection; 0.5 mg/kg, 3 mg/kg and 10 mg/kg

**Applications**

Olanzapine at 0.5 mg/kg, 3 mg/kg and 10 mg/kg (s.c.) dose-dependently increases the extracellular dopamine (DA) and norepinephrine (NE) levels in rat prefrontal cortex, nucleus accumbens and striatum. Olanzapine also increases extracellular levels of a DA metabolite, DOPAC, and tissue concentrations of a released DA metabolite, 3-methoxytyramine.

**Other notes**

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.

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**Reference:**


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**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.

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ApexBio Technology

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