Product Data Sheet

Chemical Properties

- **Product Name:** Chlorpromazine HCl
- **Cas No.:** 69-09-0
- **M.Wt:** 355.33
- **Formula:** C17H19ClN2S.HCl
- **Synonyms:** N/A
- **Chemical Name:** 3-(2-chlorophenothiazin-10-yl)-N,N-dimethylpropan-1-amine;hydrochloride
- **Canonical SMILES:** CN(C)CCC1C2=CC=CC=C2SC3=C1C=C(C=C3)Cl.Cl
- **Solubility:** ≥17.8 mg/mL in DMSO, ≥74.8 mg/mL in EtOH, ≥71.4 mg/mL in H2O
- **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:** Neuroscience
- **Pathways:** Dopamine Receptor
- **Description:** Dopamine receptors are a class of G protein-coupled receptors that are prominent in the central nervous system. Dopamine receptors are implicated in many neurological processes. Thus, dopamine receptors are common neurologic drug targets. Antipsychotics are often dopamine receptor antagonists while typically psychostimulants are indirect agonists of dopamine receptors. Chlorpromazine is a dopamine antagonist.
In vitro: The antipsychotic activity of chlorpromazine has been associated with its ability to act as a dopamine-receptor antagonist. The manner in which chlorpromazine, with its phenothiazine ring structure, interacted with a receptor for dopamine. Furthermore, chlorpromazine inhibited the binding of [3H]spiperone, and the inhibition curve was consistent with a single class of binding sites [1].

In vivo: Daily administration of chlorpromazine to rats for 21 days induced catalepsy, tolerance to catalepsy and locomotor sensitization following PCP challenge. Results suggest that daily chlorpromazine treatment induced DA/NMDA-receptor sensitization to total locomotor activity following PCP challenge [2].

Clinical trial: Chlorpromazine is clinical used as a conventional antipsychotic drug that has been used for the management of psychotic disorders since its FDA approval in 1954.

Reference:

Protocol

**Cell experiment:**

<table>
<thead>
<tr>
<th>Cell lines</th>
<th>Hippocampus neurons</th>
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</thead>
<tbody>
<tr>
<td>Preparation method</td>
<td>The solubility of this compound in DMSO is &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>
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<tr>
<td>Reacting conditions</td>
<td>Chlorpromazine HCl at 10 ~ 100 μM dose-dependently decreased mIPSC amplitude. Besides, Chlorpromazine HCl significantly accelerated the decay of mIPSC at the concentrations ≥ 30 μM in a dose-dependent manner. However, there was no significant difference on the 10 ~ 90% rise time between the control group and the Chlorpromazine HCl treatment groups.</td>
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**Animal experiment [3]:**

<table>
<thead>
<tr>
<th>Animal models</th>
<th>A rat model of hypoxia</th>
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</thead>
<tbody>
<tr>
<td>Dosage form</td>
<td>30 mg/kg; i.p.</td>
</tr>
<tr>
<td>Applications</td>
<td>In a rat model of hypoxia, Chlorpromazine HCl reduced irreversible</td>
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</tbody>
</table>
loss of synaptic transmission in brain tissues. Chlorpromazine HCl also significantly delayed the occurrence of the hypoxia-induced spreading depression in rats by slowing down the influx of Ca2+ into neurons.

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.

Reference:


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. Shortterm 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.