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Data Sheet

Product Name: Chlorpromazine (hydrochloride)
Cat. No.: HY-B0407A
CAS No.: 69-09-0
Molecular Formula: C_{17}H_{20}Cl_2N_2S
Molecular Weight: 355.33
Target: 5–HT Receptor; Autophagy; Calcium Channel; Dopamine Receptor; Sodium Channel
Pathway: Autophagy; GPCR/G Protein; Membrane Transporter/Ion Channel; Neuronal Signaling
Solubility: DMSO: ≥ 60 mg/mL

BIOLOGICAL ACTIVITY:
Chlorpromazine Hydrochloride is an antagonist of the dopamine D_2 receptors, 5–HT_2A receptors, potassium channel, sodium channel, with K_i of 363 nM and 8.3 nM for dopamine D_2 receptor and serotonin 5–HT_2A receptor, respectively.

IC50 & Target: Ki: 363 nM (dopamine D_2 receptor), 8.3 nM (5–HT_2A receptor)[4]

In Vitro: Chlorpromazine (3, 10, 20, 40, and 60 μM) decreases the peak currents of hNav1.7 in a concentration–dependent manner, with IC_{50} of 25.9 μM with a Hill coefficient of 2.3. Chlorpromazine (25 μM) produces strong use–dependent inhibition of the hNav1.7 current. Chlorpromazine blocks the hNav1.7 channel, independent of calmodulin[1]. Chlorpromazine blocks HERG potassium channels with an IC_{50} value of 21.6 μM and a Hill coefficient of 1.11. Chlorpromazine (1, 10, 100 μM) blocks HERG potassium channels expressed in Xenopus laevis oocytes in a concentration–dependent manner. Chlorpromazine blocks HERG potassium channels in the activated state[5].

In Vivo: Chlorpromazine (2 mg/kg, i.p.)–induced neurobehavioural abnormalities (NAs) are characterized by significant increase in cataleptic behaviour and loared spontaneous activity reaction time in mice[2]. Chlorpromazine (1 or 5 mg/kg, i.p.) prevents ketamine (KET) from increasing average spectral power of delta and gamma–high bands on the 5th and 10th days of treatment in rats[3].

PROTOCOL (Extracted from published papers and Only for reference)

Animal Administration: Chlorpromazine is formulated in saline.[2] Adult mice (8–10 weeks old) weighing 18–25 g are divided into five groups of six mice per group. The treatment schedule is as follows: Group 1, control (Normal Saline: NS, 10 mL/kg i.p.); Group 2, chlorpromazine (CPZ, 2 mg/kg i.p.); Group 3, bromocriptine (BMC, 2.5 mg/kg s.c.); Group 4: amlodipine (AML, 1 mg/kg s.c.); Group 5, BMC (2.5 mg/kg s.c.) + AML (1 mg/kg). Animal treated with BMC or AML or their combination also receive chlorpromazine 30 min later (i.p.). Animals are subjected to various tests including metal bar test for catalepsy and spontaneous activity wheel for motor assessment and agility and elevated plus maze, hole–board, Y–maze, open–field tests for locomotory activity, and exploratory behaviour respectively. Animals are euthanized eighteen hours later by cervical dislocation. The brain is dissected, rinsed in buffer (pH 7.6) and homogenized with Teflon and used for assessment of lipid peroxidation, reduced glutathione, superoxide dismutase and catalase.

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