Loxapine succinate

Cat. No.: HY-17390A

CAS No.: 27833-64-3

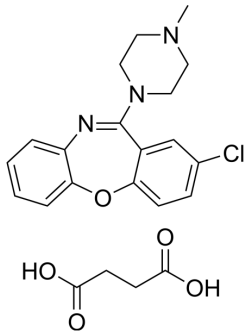
Molecular Formula: $C_{22}H_{24}ClN_3O_5$

Molecular Weight: 445.9

Target: 5-HT Receptor; Dopamine Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (224.27 mM; Need ultrasonic)
H_2O : 2.5 mg/mL (5.61 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.2427 mL	11.2133 mL	22.4266 mL
5 mM	0.4485 mL	2.2427 mL	4.4853 mL
10 mM	0.2243 mL	1.1213 mL	2.2427 mL

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: ≥ 2.5 mg/mL (5.61 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.61 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.61 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Loxapine succinate is an orally active dopamine inhibitor, 5-HT receptor antagonist and also a dibenzoxazepine anti-psychotic agent. Loxapine can also suppresses bacterial efflux pump activity and inhibit intracellular multiple-antibiotic-resistant Salmonella enterica serovar Typhimurium in macrophages[1][4][6].

IC_{50} & Target	human 5-HT_2	Human D_4 Receptor	Human D_1 Receptor	Human D_2 Receptor

In Vitro

In the presence of Loxapine, [^{3}H]ketanserin binds to 5-HT_2 receptor in Frontal cortex of brain in human and bovine with K_i value of 6.2 nM and 6.6 nM, respectively. Loxapine has the rank order of potency for the various receptors appears to be as

follows: 5-HT_2≥D_4>>>D_1>D_2 in comparing competition experiments involving the human membranes[1].
Loxapine (0-20 μM, 24 h or 72 h) reduces IL-1β secretion by LPS-activated mixed glia cultures, reduces IL-2 secretion in mixed glia cultures, and decreases IL-1β and IL-2 secretion in LPS-induced microglia cultures[2].
Loxapine (4 μM, 24 h) is active against multiple-antibiotic-resistant or Fluoroquinolone-resistant S. Typhimurium[6].
Loxapine (1, 2, 4 and 8 μM) suppresses intracellular Methicillin-resistant S. aureus (MRSA), Y. enterocolitica and S. flexneri in RAW264.7[6].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Loxapine (5 mg/kg; i.p.; daily for 4 or 10 weeks) decreases serotonin (S_2) but does not elevate dopamine (D2) receptor numbers in the rat brain[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Adult male Wistar rats (150-175 g)[3]
Dosage:	5 mg/kg
Administration:	Intraperitoneal injection, daily for 4 or 10 weeks
Result:	Induced a very significant reduction (more than 50%) of serotonin (S_2) receptor density after 4 weeks or 10 weeks of daily injection, but did not produce any significant increase in dopamine receptor density.

REFERENCES

[1]. Singh AN, et al. A neurochemical basis for the antipsychotic activity of loxapine: interactions with dopamine D1, D2, D4 and serotonin 5-HT2 receptor subtypes. J Psychiatry Neurosci. 1996 Jan;21(1):29-35.

[2]. Labuzek K, et al. Chlorpromazine and loxapine reduce interleukin-1beta and interleukin-2 release by rat mixed glial and microglial cell cultures. Eur Neuropsychopharmacol. 2005 Jan;15(1):23-30.

[3]. Lee T, et al. Loxapine and clozapine decrease serotonin (S2) but do not elevate dopamine (D2) receptor numbers in the rat brain. Psychiatry Res. 1984 Aug;12(4):277-85.

[4]. Keating GM. Loxapine inhalation powder: a review of its use in the acute treatment of agitation in patients with bipolar disorder or schizophrenia. CNS Drugs. 2013 Jun;27(6):479-89.

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