Dexpramipexole dihydrochloride

Cat. No.: HY-17355A

CAS No.: 104632-27-1

Molecular Formula: $C_{10}H_{19}Cl_2N_3S$

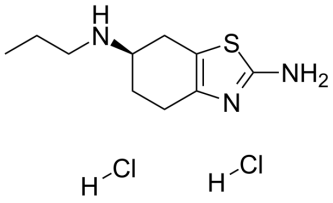
Molecular Weight: 284.25

Target: 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 (351.80 mM)

H_2O : 100 mg/mL (351.80 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.5180 mL	17.5902 mL	35.1803 mL
5 mM	0.7036 mL	3.5180 mL	7.0361 mL
10 mM	0.3518 mL	1.7590 mL	3.5180 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (351.80 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (7.32 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.32 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (7.32 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Dexpramipexole dihydrochloride ((R)-Pramipexole dihydrochloride) is a neuroprotective agent and weak non-ergoline dopamine agonist.

In Vitro

Dexpramipexole has been found to have neuroprotective effects and is being investigated for treatment of amyotrophic lateral sclerosis (ALS). Dexpramipexole reduces mitochondrial reactive oxygen species (ROS) production, inhibits the

activation of apoptotic pathways, and increase cell survival in response to a variety of neurotoxins and β-amyloid neurotoxicity. Compared to the S-(-) isomer, Dexpramipexole has much lower dopamine agonist activity.

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

CUSTOMER VALIDATION

- Neuroreport. 2023 Jan 23.
- Oxid Med Cell Longev. 2022 Aug 4;2022:6160701.

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REFERENCES

[1]. Rudnicki SA, Berry JD, Ingersoll E, et al. Dexpramipexole effects on functional decline and survival in subjects with amyotrophic lateral sclerosis in a Phase II study: subgroup analysis of demographic and clinical characteristics. Amyotroph Lateral Scler

[2]. Alavian KN, Dworetzky SI, Bonanni L, et al. Effects of dexpramipexole on brain mitochondrial conductances and cellular bioenergetic efficiency. Brain Res. 2012 Mar 29;1446:1-11.

[3]. Cudkowicz M, Bozik ME, Ingersoll EW, et al. The effects of dexpramipexole (KNS-760704) in individuals with amyotrophic lateral sclerosis. Nat Med. 2011 Nov 20;17(12):1652-6.

[4]. Bozik ME, Mather JL, Kramer WG, et al. Safety, tolerability, and pharmacokinetics of KNS-760704 (dexpramipexole) in healthy adult subjects. J Clin Pharmacol. 2011 Aug;51(8):1177-85.

[5]. Cheah BC, Kiernan MC. Dexpramipexole, the R(+) enantiomer of pramipexole, for the potential treatment of amyotrophic lateral sclerosis. IDrugs. 2010 Dec;13(12):911-20.

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