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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

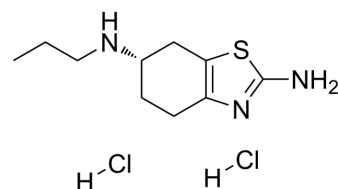
mail@szabo-scandic.com

www.szabo-scandic.com

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Pramipexole dihydrochloride

Cat. No.:	HY-17355
CAS No.:	104632-25-9
Molecular Formula:	C ₁₀ H ₁₉ Cl ₂ N ₃ S
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	H ₂ O : ≥ 50 mg/mL (175.90 mM) * "≥" means soluble, but saturation unknown.					
	Preparing Stock Solutions	Solvent Concentration	Mass	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					

BIOLOGICAL ACTIVITY

Description	Pramipexole dihydrochloride is a selective and blood-brain barrier (BBB) penetrant dopamine D2-type receptor agonist, with K _i s of 2.2 nM, 3.9 nM, 0.5 nM and 1.3 nM for D2-type receptor, D ₂ , D ₃ and D ₄ receptors, respectively. Pramipexole dihydrochloride can be used for the research of Parkinson's disease (PD) and restless legs syndrome (RLS) ^{[1][2][3]} .		
IC ₅₀ & Target	D ₂ Receptor	D ₃ Receptor	D ₄ Receptor
In Vitro	Pramipexole shows a low binding affinity for D1-type receptor, with an IC ₅₀ of >50,000 nM ^[1] . ?Pramipexole dihydrochloride (0.01-10 μM; 72 hours) produces dose-dependent increases of dendritic arborization and soma size ^[3] . ?Pramipexole dihydrochloride attenuates levodopa-induced toxicity in mesencephalic cultures, suggests that pramipexole may be cytoprotective to dopamine neurons in tissue culture ^[4] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.		

In Vivo

Pramipexole dihydrochloride (0.25-1 mg/kg; i.p.) significantly reduces the infarction volume in animals^[5].
?Pramipexole dihydrochloride improves neurological recovery^[5].
?Pramipexole dihydrochloride prevents ischemic cell death via mitochondrial pathways in ischemic stroke^[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Wistar rats weighing 250-300 g (16-18 weeks old) ^[5]
Dosage:	0.25 mg/kg, 1 mg/kg
Administration:	Intraperitoneal injection, at 1 hour, 6 hours, 12 hours, 18 hours post-occlusion
Result:	Decreased infarction volume as compared to tMCAO (transient middle cerebral artery occlusion)-only animals.

CUSTOMER VALIDATION

- Neurochem Int. 2021 Jan 22;104972.
- J Stroke Cerebrovasc Dis. 2023 Apr 25;32(7):107142.

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REFERENCES

- [1]. Kvernmo, T., et al. A review of the receptor-binding and pharmacokinetic properties of dopamine agonists. Clin Ther, 2006. 28(8): p. 1065-78.
- [2]. Takashi Okura, et al. Blood-brain barrier transport of pramipexole, a dopamine D2 agonist. Life Sci. 2007 Apr 3;80(17):1564-71.
- [3]. Ginetta Collo, et al. Ropinirole and Pramipexole Promote Structural Plasticity in Human iPSC-Derived Dopaminergic Neurons via BDNF and mTOR Signaling. Neural Plast. 2018; 2018: 4196961.
- [4]. P M Carvey, et al. Attenuation of levodopa-induced toxicity in mesencephalic cultures by pramipexole. J Neural Transm (Vienna). 1997;104(2-3):209-28.
- [5]. Syed Suhail Andrabi, et al. Pramipexole prevents ischemic cell death via mitochondrial pathways in ischemic stroke. Dis Model Mech. 2019 Aug 1; 12(8): dmm033860.

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