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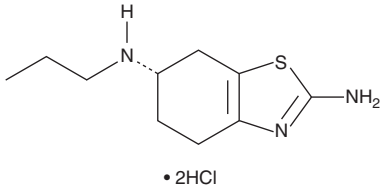
PRODUCT INFORMATION

(S)-Pramipexole (hydrochloride)

Item No. 11981

CAS Registry No.: 104632-25-9
Formal Name: (6S)-4,5,6,7-tetrahydro-N^6-propyl-2,6-benzothiazolediamine, dihydrochloride
Synonym: (–)-Pramipexole
MF: $C_{10}H_{17}N_3S \bullet 2HCl$
FW: 284.2
Purity: ≥98%
UV/Vis.: λ_{max}: 220, 264 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

(S)-Pramipexole (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the (S)-pramipexole (hydrochloride) in the solvent of choice, which should be purged with an inert gas. (S)-Pramipexole (hydrochloride) is soluble in the organic solvent DMSO at a concentration of approximately 5 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of (S)-pramipexole (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (S)-pramipexole (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(S)-Pramipexole is a dopamine D_{2S}, D_{2L}, D_3, and D_4 receptor agonist (EC_{50}s = 426.58, 338.84, 2.24, and 128.82 nM, respectively, in a [^{35}S]GTPγS binding assay).[1] It is also a partial agonist of α_{2A}-adrenergic receptors (α_{2A}-ARs; EC_{50} = 3,548.13 nM). (S)-Pramipexole is selective for dopamine D_{2-4} receptors (K_is = 954.99, 1,698.24, 12.59, 128.82 nM for for D_{2S}, D_{2L}, D_3, and D_4 receptors, respectively, in a radioligand binding assay) over D_1 and D_5 receptors (K_is = >10,000 nM for both).[2] It prevents MPTP-induced decreases in the number of dopaminergic neurons in the substantia nigra pars compacta in common marmosets when administered at a dose of 60 µg/kg per day before, during, and after administration of MPTP.[3] Formulations containing (S)-pramipexole have been used in the treatment of Parkinson's disease and restless legs syndrome.

References

1. Newman-Tancredi, A., Cussac, D., Audinot, V., *et al.* Differential actions of antiparkinson agents at multiple classes of monoaminergic receptor. II. Agonist and antagonist properties at subtypes of dopamine D_2-like receptor and α_1/α_2-adrenoceptor. *J. Pharmacol. Exp. Ther.* **303(2)**, 805-814 (2002).
2. Millan, M.J., Maiofiss, L., Cussac, D., *et al.* Differential actions of antiparkinson agents at multiple classes of monoaminergic receptor. I. A multivariate analysis of the binding profiles of 14 drugs at 21 native and cloned human receptor subtypes. *J. Pharmacol. Exp. Ther.* **303(2)**, 791-804 (2002).
3. Iravani, M.M., Haddon, C.O., Cooper, J.M., *et al.* Pramipexole protects against MPTP toxicity in non-human primates. *J. Neurochem.* **96(5)**, 1315-1321 (2006).

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