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ProductInformation

Chlorpromazine hydrochloride

Product Number **C8138**
Store at Room Temperature

Product Description

Molecular Formula: $C_{17}H_{19}ClN_2S \cdot HCl$
Molecular Weight: 355.3
CAS Number: 69-09-0
Melting Point: 179-180 °C (with decomposition, capillary method); 194-196 °C (microblock method)[1]
λ_{max}: 253 nm (0.12 M HCl)
Extinction Coefficient: E^{mM} = 31.5 (0.12 M HCl)
Synonyms: 2-chloro-N,N-dimethyl-10H-phenothiazine-10-propanamine; 2-chloro-10-(3-dimethylaminopropyl)phenothiazine; *N*-(3-dimethylaminopropyl)-3-chlorophenothiazine[1]

Chlorpromazine is a compound that is used in cell signaling and neuroscience research. It is a dopamine inhibitor, notably at the D_2-dopaminergic receptor. It also has α-adrenergic blocking activity and stimulates prolactin release.[1,2] The antifungal properties of chlorpromazine and other compounds has been reviewed.[3] The role of chlorpromazine and other tricyclic compounds as inhibitors of neuronal voltage-gated K channels has been discussed.[4]

The use of chlorpromazine (0 - 0.2 mM) to induce stress in *E. coli* to study regulation of the RcsCB His-Asp phosphorelay system has been described.[5] The effect of chlorpromazine (1 µM) and other dopamine-active drugs on the production of oxytocin and vasopressin in rat neurohypophyseal tissue cultures has been studied.[6] Chlorpromazine has been used to probe long-term potentiation of corticostriatal synaptic transmission in rat.[7] Chlorpromazine (12 or 25 µM) has been shown to limit lipid accumulation in the human breast cell line HBL-100, as initially induced by tetraphenylphosphonium chloride.[8]

An analytical method for chlorpromazine that couples high performance liquid chromatography to inductively coupled plasma mass spectroscopy has been described.[9]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (50 mg/ml), yielding a clear, faint yellow to very faint gray solution.

References

1. The Merck Index, 12th ed., Entry# 2238.
2. Martindale The Extra Pharmacopoeia, 31st ed., Reynolds, J. E. F., ed., Royal Pharmaceutical Society (London, UK: 1996), pp. 687-695.
3. Afeltra, J., and Verweij, P. E., Antifungal activity of nonantifungal drugs. Eur. J. Clin. Microbiol. Infect. Dis., **22(7)**, 397-407 (2003).
4. Mathie, A., et al., Voltage-activated potassium channels in mammalian neurons and their block by novel pharmacological agents. Gen. Pharmacol., **30(1)**, 13-24 (1998).
5. Conter, A., et al., The RcsCB His-Asp phosphorelay system is essential to overcome chlorpromazine-induced stress in *Escherichia coli*. J. Bacteriol., **184(10)**, 2850-2853 (2002).
6. Galfi, M., et al., Effects of dopamine and dopamine-active compounds on oxytocin and vasopressin production in rat neurohypophyseal tissue cultures. Regul. Pept., **98(1-2)**, 49-54 (2001).
7. Zhang, C., et al., Regeneration of dopaminergic function in 6-hydroxydopamine-lesioned rats by neuroimmunophilin ligand treatment. J. Neurosci., **21(15)**, RC156, 1-6 (2001).
8. Sathasivam, N., et al., Inhibition of tetraphenylphosphonium-induced NMR-visible lipid accumulation in human breast cells by chlorpromazine. Biochim. Biophys. Acta, **1633(3)**, 149-160 (2003).
9. Duckett, C. J., et al., Quantitation in gradient high performance liquid chromatography/inductively coupled mass spectrometry investigated using diclofenac and chlorpromazine. Rapid Commun. Mass Spectrom., **16(4)**, 245-247 (2002).

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