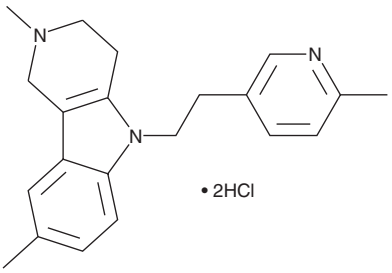
PRODUCT INFORMATION

Dimebolin (hydrochloride)

Item No. 10011349

CAS Registry No.: 97657-92-6
Formal Name: 2,3,4,5-tetrahydro-2,8-dimethyl-5-[2-(6-methyl-3-pyridinyl)ethyl]-1H-pyrido[4,3-b]indole, dihydrochloride
Synonyms: Dimebon, Latrepirdine
MF: $C_{21}H_{25}N_3$ • 2HCl
FW: 392.4
Purity: ≥98%
UV/Vis.: λ_{max}: 224, 270 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Dimebolin (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the dimebolin (hydrochloride) in the solvent of choice. Dimebolin (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of dimebolin (hydrochloride) in ethanol, DMSO, and DMF is approximately 3, 10, and 1 mg/ml, respectively.

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 dimebolin (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of dimebolin (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

Dimebolin is a neuroprotective agent.[1-3] It binds to histamine H_1 and H_2 receptors (IC_{50}s = 3.8 and 287 nM, respectively), as well as α_{1A}-, α_{1B}-, α_{1D}-, and α_{2A}-adrenergic receptors (ARs), imidazoline I_2 receptors, and the serotonin (5-HT) receptor subtypes 5-HT_{2A}, 5-HT_{2C}, 5-HT_6, and 5-HT_7 (K_is = 8-313 nM).[4] It also inhibits NMDA-evoked currents and voltage-gated calcium channels in mouse primary striatal neurons (IC_{50}s = 10 and 50 µM, respectively).[1] Dimebolin (50 µM) inhibits glutamate-induced apoptosis in primary striatal neurons derived from the YAC128 transgenic mouse model of Huntington's disease. It inhibits cell death induced by amyloid-β (25-35) (Item No. 24155) in cerebellar granule cells when used at a concentration of 25 µM.[2] Dimebolin (1 mg/kg) inhibits decreases in two-way active avoidance reaction (TWAA) acquisition in a rat model of Alzheimer's disease induced by 1-ethyl-1-(2-hydroxyethyl) aziridinium (AF64A).[3]

References

1. Wu, J., Li, Q., and Bezprozvanny, I. *Molecular Neurodegeneration* **3(15)**, (2008).
2. Lermontova, N.N., Redkozubov, A.E., Shevtsova, E.F., *et al. B. Exp. Biol. Chem.* **132(5)**, 1079-1083 (2001).
3. Lermontova, N.N., Lukoyanov, N.V., Serkova, T.P., *et al. B. Exp. Biol. Chem.* **129(6)**, 640-642 (2000).
4. Okun, I., Tkachenko, S.E., Khvat, A., *et al.* Curr. *Alzheimer Res.* **7(2)**, 97-112 (2010).

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