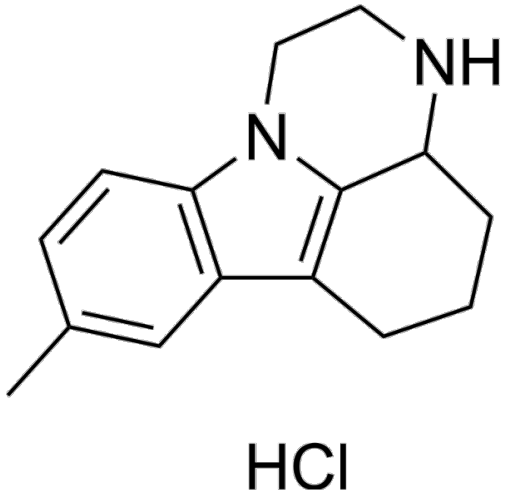
Product Data Sheet

Product Name: Pirlindole hydrochloride
Cat. No.: GC79774

Chemical Properties

Cas. No.	16154-78-2		
Formula	$C_{15}H_{19}ClN_2$	M.Wt	262.78
Solubility		Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Background

Pirlindole hydrochloride is an orally active, selective and reversible MAO-A inhibitor with an IC_{50} value of 250 nM. Pirlindole hydrochloride inhibits genomic replication of Enterovirus species B and D, and exhibits moderate activity against enterovirus species A. Pirlindole hydrochloride inhibits MAO-A -mediated monoamine metabolism, promotes adult hippocampal neurogenesis, rescues stress-induced dendritic atrophy of hippocampal granule neurons, reverses behavioral effects associated with chronic mild stress, and also possesses anticonvulsant, analgesic, local anesthetic, hypotensive, antiplatelet aggregation and antispasmodic activities. Pirlindole hydrochloride shows no detectable mutagenic, clastogenic or carcinogenic properties. Pirlindole hydrochloride can be used in research

related to depression and enterovirus infections [1] [2] [3] [4].

In Vivo, Pirlindole (i.p.; administered daily for 21 consecutive days at doses of 5-30 mg/kg) hydrochloride reverses chronic mild stress-induced depressive-like behaviors (with the strongest effects observed at doses of 5 mg/kg and 15 mg/kg) and restores hippocampal neuroplasticity by enhancing adult neurogenesis at all tested doses and reversing dendritic atrophy at the dose of 30 mg/kg[1]. Pirlindole (5-25 mg/kg; i.p.; single acute administration or twice daily for 14 consecutive days) hydrochloride significantly reduces the immobility time of mice in the forced swimming test, with efficacy comparable to that of standard antidepressants[3]. Pirlindole (10 mg/kg; intraperitoneal injection; once daily for 5 consecutive days) hydrochloride enhances electrical self-stimulation behavior in rats with hypofunction of the reward system induced by internal capsule injury[3]. Pirlindole (administered via i.p. or p.o. at 1-50 mg/kg) hydrochloride antagonizes reserpine -induced ptosis and hypothermia, as well as tetrabenazine -induced ptosis in mice[3]. Pirlindole (10-25 mg/kg; p.o.) hydrochloride antagonizes the sedative effect induced by Diazepam[3].

In Vitro, Pirlindole hydrochloride selectively inhibits MAO-A in rat brain with an IC_{50} value of 250 nM, and its inhibitory potency against MAO-B in rat brain and heart is more than 200-fold lower[3]. Pirlindole (0.1 nM-34 μM) hydrochloride slightly increases electrically stimulated dopamine release at concentrations of 0.1-10 nM, and doubles electrically induced norepinephrine and serotonin release at concentrations of 4.5 μM and 34 μM, respectively, in rat cortical slices[3]. Pirlindole (3 μg/mL) hydrochloride prolongs the refractory period of electrically stimulated rabbit atrial contractions[3]. Pirlindole (Up to 0.5 mg per plate) hydrochloride shows no mutagenic activity in the Ames test using Salmonella typhimurium strains TA 98, TA 1537, TA 100, and TA 1535, with or without metabolic activation[3]. Pirlindole (10 μM) hydrochloride potently inhibits CV-B3 replication in HeLa R19 cells, as evidenced by a significant reduction in GFP fluorescence intensity and extremely low cytotoxicity[4]. Pirlindole (0.3-30 μM; 8 h postinfection) hydrochloride inhibits the replication of CV-B3 in BGM cells and EV-D68 in HeLa R19 cells, exhibits moderate activity against EV-A71, and shows no activity against EV-C, rhinoviruses or EMCV[4].

References:
[1]. Morais M, et al. The effects of chronic stress on hippocampal adult neurogenesis and dendritic

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plasticity are reversed by selective MAO-A inhibition. Journal of psychopharmacology (Oxford, England). 2014 Dec;28(12):1178-83.
[2]. Macedo A, et al. Pirlindole in the treatment of depression: a meta-analysis. Clinical drug investigation. 2011;31(1):61-71.
[3]. Bruhwyler J, et al. Pirlindole: a selective reversible inhibitor of monoamine oxidase A. A review of its preclinical properties. Pharmacological research. 1997 Jul;36(1):23-33.
[4]. Ulferts R, et al. Screening of a Library of FDA-Approved Drugs Identifies Several Enterovirus Replication Inhibitors That Target Viral Protein 2C. Antimicrobial agents and chemotherapy. 2016 May;60(5):2627-38.

Caution: Product has not been fully validated for medical applications. For research use only.
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