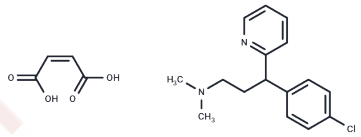
Data Sheet (Cat.No.T1553)

TargetMol

Chlorpheniramine maleate

Chemical Properties



CAS No. : 113-92-8

Formula: C20H23ClN2O4

Molecular Weight: 390.87

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Chlorpheniramine maleate (NCI-C55265) is a histamine H1 antagonist used in allergic reactions, hay fever, rhinitis, urticaria, and asthma.
Targets(IC50)	Histamine Receptor
In vitro	Oral administration of Chlorpheniramine (10 mg/kg) can suppress short-term scratching in BALB/c mice experiencing albumin-induced allergic skin irritation and ICR mice injected with histamine subcutaneously. Furthermore, in guinea pigs induced with histamine (ED50=0.17 mg/kg), oral intake of Chlorpheniramine prevents mortality. In rats, a dosage of Chlorpheniramine (20 mg/kg) is capable of blocking the histamine or cholinergic mechanisms that induce rapid eye movement (REM) sleep.
In vivo	Chlorpheniramine inhibits the binding of [3H] mepyramine to guinea pig cortical histamine H1 receptors (IC50=8.8 nM). It reduces ornithine decarboxylase mRNA translation in MCF-7, MDA-MB 231, and Ehrlich cells at a concentration of 250 μM, subsequently inhibiting cell proliferation. Chlorpheniramine displays antimalarial activity against Chloroquine-Sensitive (CQS) Plasmodium falciparum strain D6 (IC50=61.2uM) and Multidrug-Resistant (MDR) strain Dd2 (IC50=3.9uM). Furthermore, it exhibits cytotoxicity in mouse splenic lymphocytes induced by Concanavalin A (IC50=33.4 μM).
Kinase Assay	H1-Antihistaminic Activity: The segments (1 cm) of isolated ileum from guinea pigs are suspended in an organ bath containing Tyrode solution (ventilation, 32 °C). The contractile responses to histamine (0.54 μM) are measured with an isotonic transducer. A set concentration of Chlorpheniramine is added in the organ bath 5 minutes before the addition of histamine. IC50 value of Chlorpheniramine is calculated by the probit methond.
Cell Research	Cells are exposed to various concentrations of Chlorpheniramine for 48 hours. Cells are washed, detached, and counted with a Coulter counter for the determination of cell growth.(Only for Reference)

Solubility Information

Solubility	H2O: 50 mg/mL (127.92 mM),Sonication is recommended. DMSO: 100 mg/mL (255.84 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5584 mL	12.792 mL	25.584 mL
5 mM	0.5117 mL	2.5584 mL	5.1168 mL
10 mM	0.2558 mL	1.2792 mL	2.5584 mL
50 mM	0.0512 mL	0.2558 mL	0.5117 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Iemura R, et al. J Med Chem, 1986, 29(7), 1178-1183.
Sleevi MC, et al. J Med Chem, 1991, 34(4), 1314-1328.
Medina MA, et al. Breast Cancer Res Treat, 1995, 35(2), 187-194.
Kelly JX, et al. Antimicrob Agents Chemother, 2007, 51(11), 4133-4140.
Kim JH, et al. J Pharmacol Exp Ther, 2009, 330(2), 403-412.