# Chlorpheniramine maleate

**Cat. No.:** HY-B0286A

**CAS No.:** 113-92-8

**Molecular Formula:** $C_{20}H_{23}ClN_2O_4$

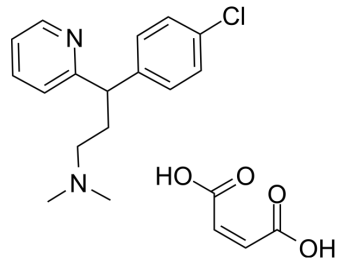
**Molecular Weight:** 390.86

**Target:** Histamine Receptor

**Pathway:** GPCR/G Protein; Immunology/Inflammation; Neuronal Signaling

**Storage:** 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 100 mg/mL (255.85 mM)

$H_2O$ : 33.33 mg/mL (85.27 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

| Preparing Stock Solutions | Mass / Solvent / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.5585 mL | 12.7923 mL | 25.5846 mL |
| | 5 mM | 0.5117 mL | 2.5585 mL | 5.1169 mL |
| | 10 mM | 0.2558 mL | 1.2792 mL | 2.5585 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: PBS
   Solubility: 120 mg/mL (307.02 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (6.40 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.40 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.40 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description** Chlorpheniramine maleate is a histamine H1 receptor antagonist with an $IC_{50}$ of 12 nM[1][2][3].

**$IC_{50}$ & Target** $H_1$ Receptor

**In Vitro** Chlorpheniramine maleate shows antimalarial activity against P. falciparum ($IC_{50}$: 61.2 and 3.9 μM for D6 and Dd2 strain)[2].

| | |
|---|---|
| | Chlorpheniramine maleate reduces the proton currents ($IC_{50}$: 43 μM) in BV2 microglial cells[5].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | Chlorpheniramine maleate (10 mg/kg, p.o) inhibits scratching in Ovalbumin (HY-W250978)-challenged BALB/c mice[4].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- Chemosphere. 2019 Jun;225:378-387.
- J Pharm Sci. 2019 Sep;108(9):2895-2904.

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## REFERENCES


[1]. Kim J, et al. Inhibitory effects of antihistamines, diphenhydramine and chlorpheniramine, on proton currents in BV2 microglial cells. Eur J Pharmacol. 2017 Mar 5;798:122-128.

[2]. Medina, M.A., et al., Chlorpheniramine inhibits the synthesis of ornithine decarboxylase and the proliferation of human breast cancer cell lines. Breast Cancer Res Treat, 1995. 35(2): p. 187-94.

[3]. Kelly, J.X., et al., Design, synthesis, and evaluation of 10-N-substituted acridones as novel chemosensitizers in Plasmodium falciparum. Antimicrob Agents Chemother, 2007. 51(11): p. 4133-40.

[4]. Iemura, R., et al., Synthesis of 2-(4-substituted-1-piperazinyl)benzimidazoles as H1-antihistaminic agents. J Med Chem, 1986. 29(7): p. 1178-83.

[5]. Takano, N., I. Arai, and M. Kurachi, Analysis of the spontaneous scratching behavior by NC/Nga mice: a possible approach to evaluate antipruritics for subjects with atopic dermatitis. Eur J Pharmacol, 2003. 471(3): p. 223-8.





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