Cetirizine

Cat. No.: HY-17042

CAS No.: 83881-51-0

Molecular Formula: $C_{21}H_{25}ClN_2O_3$

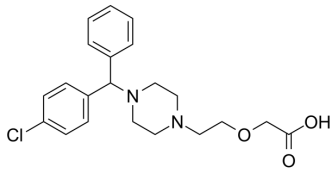
Molecular Weight: 388.89

Target: Histamine Receptor

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

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (642.86 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5714 mL	12.8571 mL	25.7142 mL
	5 mM	0.5143 mL	2.5714 mL	5.1428 mL
	10 mM	0.2571 mL	1.2857 mL	2.5714 mL

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

In Vivo

1. Cetirizine is dissolved in PBS[6].

BIOLOGICAL ACTIVITY

Description

Cetirizine, a second-generation antihistamine and the carboxylated metabolite of hydroxyzine, is a specific, orally active and long-acting histamine H1-receptor antagonist. Cetirizine marks antiallergic properties and inhibits eosinophil chemotaxis during the allergic response[1][2][3].

In Vitro

Cetirizine (>5 μM) at higher concentrations can reduce the release of GM-CSF and IL-8 from A549 cells stimulated with IL-1β. Cetirizine exerts anti-inflammatory effects beyond histamine H1-receptor antagonist[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	Human airway epithelial cell line A549.
Concentration:	0-10 μM.
Incubation Time:	24 h.
Result:	The survival of A549 cells incubated with various concentrations of cetirizine (0.1, 1, 2.5, 5, and 10 μM) for 24 hours were all higher than 90% when comparing with the control group by MTT test.

	Cetirizine, 5 and 10 μM, suppressed GM-CSF release by 70.71 and 61.55%, respectively. Preincubation with cetirizine, 10 μM, suppressed the IL-8 secretion by 75.04%.

In Vivo

Cetirizine (20 mg/kg, mice, orally) exerts its anti-inflammatory effects by inhibiting MIF as well as IL-8 production in mice immunized and challenged with ragweed pollen[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male 8-week-old BALB/c mice (25-30 g) immunized and challenged with ragweed pollen[3].
Dosage:	2 or 20 mg/kg.
Administration:	Orally, diluted in sterile water on days 18, 19, and 20.
Result:	The neutrophilia at 8 h and eosinophilia at 24 h induced by ragweed pollen extract per oswere significantly reduced in the mice treated with 20 mg/kg. The dosage with 2 mg/kg had no effect.

CUSTOMER VALIDATION

- Pharmacol Res. 2017 Nov;125(Pt B):150-160.
- Behav Brain Res. 2021 May 27;113388.

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REFERENCES

[1]. Caroline M. Spencer, et al. Cetirizine. Drugs 46 (6): 1055•1080, 1993.

[2]. Shih MY, et al. Influence of cetirizine and levocetirizine on two cytokines secretion in human airway epithelial cells. Allergy Asthma Proc. 2008 Sep-Oct;29(5):480-5.

[3]. Shimizu T, et al. Cetirizine, an H1-receptor antagonist, suppresses the expression of macrophage migration inhibitory factor: its potential anti-inflammatory action. Clin Exp Allergy. 2004 Jan;34(1):103-9.

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