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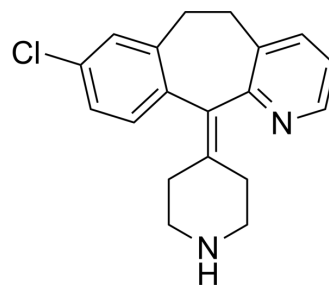
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Desloratadine

Cat. No.:	HY-B0539		
CAS No.:	100643-71-8		
Molecular Formula:	C ₁₉ H ₁₉ ClN ₂		
Molecular Weight:	310.82		
Target:	Histamine Receptor; TNF Receptor; Leukotriene Receptor		
Pathway:	GPCR/G Protein; Immunology/Inflammation; Neuronal Signaling; Apoptosis		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (80.43 mM; Need ultrasonic)
 H₂O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.2173 mL	16.0865 mL	32.1730 mL
	5 mM	0.6435 mL	3.2173 mL	6.4346 mL
	10 mM	0.3217 mL	1.6086 mL	3.2173 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (8.04 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (8.04 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (8.04 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Desloratadine (Sch34117) is an orally active and selective H₁ receptor antagonist (K_i=0.9 nM) with anti-inflammatory and anti-allergic activities. Desloratadine inhibits the release of histamine and LTC₄ from human basophils and targets the regulatory signals of IL-4 and IL-13 production in basophils. Desloratadine significantly alleviates SAR symptoms in patients with concurrent asthma and can be used in the study of seasonal allergic rhinitis and chronic idiopathic urticaria^{[1][2][3][4][5][6]}.

IC ₅₀ & Target	H ₁ Receptor	Human Endogenous Metabolite
In Vitro	<p>Desloratadine (300 nmol/L-100 μmol/L) inhibits the release or production of multiple inflammatory mediators in cells with high affinity receptors for IgE^[1].</p> <p>Desloratadine (1-10 μM, 15 min) has an inhibitory effect on IGE-induced IL-4 and IL-13 secretion that is nearly 6-7 times greater than its inhibitory effect on histamine and LTC₄ release^[2].</p> <p>Desloratadine (0.1-10 μmol/L, 1 h) dose-dependently inhibits platelet-activating factor (PAF)-induced eosinophil chemotaxis and TNF-α-induced eosinophil adhesion to human umbilical vein endothelial cells^[5].</p> <p>Desloratadine (1, 10 and 50 μM, 30 min) inhibits the activation of eosinophils and mast cells in polyp tissues of patients with chronic sinusitis^[6].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>	
In Vivo	<p>Desloratadine inhibits histamine-induced paw edema in a mouse inflammatory model in a dose-dependent manner (ED₅₀ =0.15 mg/kg; p.o.) and dose-dependently reduces the number of coughs after ovalbumin (HY-W250978) sensitization and antigen challenge in sensitized guinea pigs (the minimum effective antitussive dose is 0.3 mg/kg)^[5].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>	

CUSTOMER VALIDATION

- Nat Commun. 2022 Nov 10;13(1):6796.
- Acta Pharmacol Sin.2024 May 24.
- J Med Chem. 2021 Mar 11;64(5):2725-2738.
- iScience. 5 January 2022, 103731.
- PLoS Negl Trop Dis. 2019 Aug 20;13(8):e0007681.

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REFERENCES

- [1]. Agrawal, et al. "Pharmacology and clinical efficacy of desloratadine as an anti-allergic and anti-inflammatory drug." Expert opinion on investigational drugs 10.3 (2001): 547-560.
- [2]. Kowalski, et al. "Inhibition of nasal polyp mast cell and eosinophil activation by desloratadine." Allergy 60.1 (2005): 80-85.
- [3]. Geha, R.S. and E.O. Meltzer, Desloratadine: A new, nonsedating, oral antihistamine. J Allergy Clin Immunol, 2001. 107(4): p. 751-62.
- [4]. Schroeder, J.T., et al., Inhibition of cytokine generation and mediator release by human basophils treated with desloratadine. Clin Exp Allergy, 2001. 31(9): p. 1369-77.
- [5]. Anthes, J.C., et al., Biochemical characterization of desloratadine, a potent antagonist of the human histamine H(1) receptor. Eur J Pharmacol, 2002. 449(3): p. 229-37.
- [6]. McClellan K, et al. Desloratadine. Drugs. 2001;61(6):789-797.

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

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