Naphazoline hydrochloride

Cat. No.: HY-B0446

CAS No.: 550-99-2

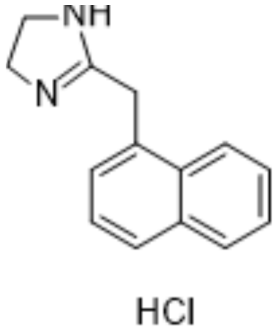
Molecular Formula: $C_{14}H_{15}ClN_2$

Molecular Weight: 246.74

Target: Adrenergic Receptor; TNF Receptor; Interleukin Related; VEGFR

Pathway: GPCR/G Protein; Neuronal Signaling; Apoptosis; Immunology/Inflammation; Protein Tyrosine Kinase/RTK

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

H_2O : 50 mg/mL (202.64 mM; Need ultrasonic)
DMSO : ≥ 25 mg/mL (101.32 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	4.0528 mL	20.2642 mL	40.5285 mL
	5 mM	0.8106 mL	4.0528 mL	8.1057 mL
	10 mM	0.4053 mL	2.0264 mL	4.0528 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 75 mg/mL (303.96 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 (10.13 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (10.13 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.13 mM); Suspended solution

BIOLOGICAL ACTIVITY

Description

Naphazoline (Naphthazoline) hydrochloride is a potent α-adrenergic receptor agonist. Naphazoline hydrochloride reduces vascular hyperpermeability and promotes vasoconstriction. Naphazoline hydrochloride reduces the levels of inflammatory factors (TNF-α, IL-1β and IL-6), cytokines (IFN-γ and IL-4), IgE, GMCSF, and NGF. Naphazoline hydrochloride can be used for non-bacterial conjunctivitis research[1][2].

IC_{50} & Target	IL-1β	IL-6	IL-4

In Vivo

Naphazoline hydrochloride (0.2 mg/kg, 10 μl per eye; IP, once) reduces histamine or antigen-induced conjunctival vascular hyperpermeability in mice, and reduces conjunctivitis in mice via effects on inflammation, NGF and VEGF[1].

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

Animal Model:	Female wild-type BALB/c mice (4-5 weeks, 18 ± 2 g, n=8/group, allergic conjunctivitis mouse model established using histamine or an antigen (ovalbumin))[1]
Dosage:	0.2 mg/mL, 10 μl per eye
Administration:	Intraperitoneal injection (IP), once
Result:	Significantly suppressed conjunctival dye leakage in mice with histamine or antigen induced conjunctival vascular hyperpermeability. Reduced inflammatory reactions and the levels of IL-1β, IL-6, IFN-γ, and IL-4. Reduced the levels of IgE, GMCSF, NGF and VEGF in antigen-induced conjunctival vascular hyperpermeability mice.

REFERENCES

[1]. Quan L, et, al. Treatment with olopatadine and naphazoline hydrochloride reduces allergic conjunctivitis in mice through alterations in inflammation, NGF and VEGF. Mol Med Rep. 2016 Apr;13(4):3319-25.

[2]. Yamaguchi I, et, al. Central and peripheral adrenergic mechanisms regulating gastric secretion in the rat. J Pharmacol Exp Ther. 1977 Oct;203(1):125-31.

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