Naphazoline nitrate

Cat. No.: HY-111326A

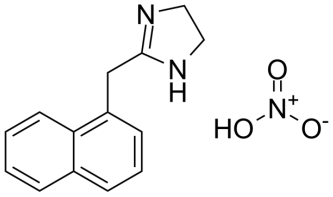
CAS No.: 5144-52-5

Molecular Formula: $C_{14}H_{15}N_3O_3$

Molecular Weight: 273.29

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

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



Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month

SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (365.91 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6591 mL	18.2956 mL	36.5912 mL
	5 mM	0.7318 mL	3.6591 mL	7.3182 mL
	10 mM	0.3659 mL	1.8296 mL	3.6591 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (9.15 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.15 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.15 mM); Suspended solution

BIOLOGICAL ACTIVITY

Description

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

IC_{50} & Target	IL-1β	IL-6	IL-4

In Vivo

Naphazoline nitrate (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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