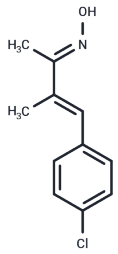
Data Sheet (Cat.No.T21543)

TargetMol

AP 18

Chemical Properties



CAS No. : 55224-94-7

Formula: C11H12ClNO

Molecular Weight: 209.67

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	AP-18 is a potent and selective TRPA1 inhibitor. AP-18 inhibits activation of TRPA1 induced by 50 μM Cinnamaldehyde with an IC50 of 3.1 μM and 4.5 μM for human and mouse TRPA1, respectively. AP-18 could reverse complete Freund's adjuvant (CFA)-induced mechanical hyperalgesia in mice. AP-18 could attenuate Yo-Pro uptake induced by 30 μM AITC in a concentration-dependent manner (IC50= 10.3 μM).
Targets(IC50)	TRP/TRPV Channel
In vitro	At concentrations up to 50 μM, AP-18 does not significantly inhibit the activation of TRPV1, TRPV2, TRPV3, TRPV4, or TRPM8. However, it effectively and reversibly inhibits the activation of mouse TRPA1 by iodoacetamide (an irreversible cysteine-alkylating agent) in CHO cells, as determined through ratiometric Ca2+ imaging. Additionally, AP-18 prevents cold- and mustard-oil-triggered activation of mouse TRPA1 and inhibits TRPA1 currents induced by cinnamaldehyde in Xenopus oocyte excised patches, demonstrating its specificity and effectiveness in modulating TRPA1 activity [1] [2] [3].
In vivo	AP18 (1 mM; injected in the hindpaw of mice) effectively inhibits nociceptive events triggered by cinnamaldehyde, but not those induced by capsaicin, demonstrating its specificity and efficacy [1].

Solubility Information

Solubility	DMSO: 50 mg/mL (238.47 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 2.5 mg/mL (11.92 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.7694 mL	23.847 mL	47.694 mL
5 mM	0.9539 mL	4.7694 mL	9.5388 mL
10 mM	0.4769 mL	2.3847 mL	4.7694 mL
50 mM	0.0954 mL	0.4769 mL	0.9539 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Matt Petrus, et al. A role of TRPA1 in mechanical hyperalgesia is revealed by pharmacological inhibition. Mol Pain. 2007;3:40. Published 2007 Dec 17.

Jun Chen, et al. Pore dilation occurs in TRPA1 but not in TRPM8 channels. Mol Pain. 2009;5:3. Published 2009 Jan 21.

Thomas E Taylor-Clark, et al. Nitrooleic acid, an endogenous product of nitrative stress, activates nociceptive sensory nerves via the direct activation of TRPA1. Mol Pharmacol. 2009;75(4):820-829.

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