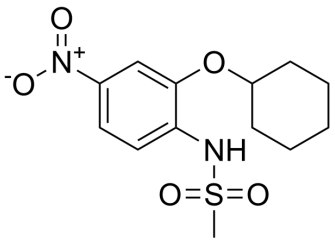
NS-398

Cat. No.:	HY-13913
CAS No.:	123653-11-2
Molecular Formula:	$C_{13}H_{18}N_2O_5S$
Molecular Weight:	314.36
Target:	COX
Pathway:	Immunology/Inflammation
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 : 33.33 mg/mL (106.02 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.1811 mL	15.9053 mL	31.8107 mL
	5 mM	0.6362 mL	3.1811 mL	6.3621 mL
	10 mM	0.3181 mL	1.5905 mL	3.1811 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (7.95 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1.67 mg/mL (5.31 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (5.31 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NS-398 is a non-steroidal an-inflammatory agent with analgesic and antipyretic effects, and selectively inhibits prostaglandin G/H synthase 2/cyclooxygenase 2 (COX-2) activity, with an IC_{50} of 3.8 μM, and has no effect on COX-1 at 100 μM.

IC_{50} & Target

COX-2
3.8 μM (IC_{50})

In Vitro	NS-398 is a non-steroidal an-inflammatory agent, selectively inhibits prostaglandin G/H synthase/cyclooxygenase (COX-2) activity, with an IC_{50} of 3.8 μM, and has no effect on COX-1 at 100 μM[1]. NS-398 weakly inhibits PG endoperoxide synthase activity from sheep seminal vesicle microsomes (IC_{50}, 11 μM)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	NS-398 (0.5-10 mg/kg, p.o.) dose-dependently inhibits paw edema in rats, with an ED_{30} of 1.14 mg/kg, shows therapeutic effects on adjuvant arthritis (ED_{30}, 4.69 mg/kg), exhibits dose-dependent analgesic activity (ED_{50}, 1.65 mg/kg), and has antipyretic effect (ED_{50}, 1.84 mg/kg) in rats. In mice, NS-398 suppresses writhing reactions induced by acetic acid with an ED_{50} of 8.2 mg/kg[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [2]	Mice[2] Briefly, male ddy mice weighing about 30 g are used. The writhing syndrome is induced by injecting 0.75% of acetic acid, intraperitoneally. Ten minutes later, the number of writhings are counted for the next 10 min. NS-398 is administered orally 30 min prior to the injection. The analgesic effect is expressed as % of inhibition, compared with the vehicle-treated control [2]. Rats[2] Briefly, male Lewis rats weighing about 160 g are used. Arthritis is induced by injecting 0.1 mL of 0.7% Mycobacterium tubercu-losis-liquid paraffin into the left hind paw. On day 15, the rats are grouped according to the degree of secondary lesions in the right hind paw. NS-398 is administered orally once daily from days 15 to 18. Foot volume is measured on day 19. Relative edema volume (REV) is calculated for each animal[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Neurosci. 2024 Jan 2.
- Nat Commun. 2024 Sep 12;15(1):7996.
- Acta Pharm Sin B. 2023 Oct 28.
- EBioMedicine. 2019 Jul;45:341-350.
- Cell Commun Signal. 2023 Sep 18;21(1):242.

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REFERENCES

[1]. Futaki N, et al. NS-398, a new anti-inflammatory agent, selectively inhibits prostaglandin G/H synthase/cyclooxygenase (COX-2) activity in vitro. Prostaglandins. 1994 Jan;47(1):55-9.

[2]. Futaki N, et al. NS-398, a novel non-steroidal anti-inflammatory drug with potent analgesic and antipyretic effects, which causes minimal stomach lesions. Gen Pharmacol. 1993 Jan;24(1):105-10.

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

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