Meclofenamic acid sodium

Cat. No.: HY-B1320

CAS No.: 6385-02-0

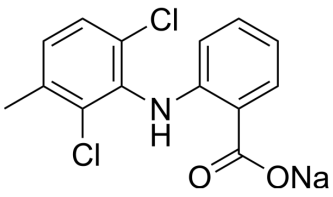
Molecular Formula: $C_{14}H_{10}Cl_2NNaO_2$

Molecular Weight: 318.13

Target: Gap Junction Protein; Endogenous Metabolite; Fat Mass and Obesity-associated Protein (FTO)

Pathway: Cytoskeleton; Metabolic Enzyme/Protease

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 1 year; -20°C, 6 months (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (392.92 mM; Need ultrasonic)
H_2O : 100 mg/mL (314.34 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.1434 mL	15.7168 mL	31.4337 mL
	5 mM	0.6287 mL	3.1434 mL	6.2867 mL
	10 mM	0.3143 mL	1.5717 mL	3.1434 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: ≥ 2.08 mg/mL (6.54 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.54 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (6.54 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Meclofenamic acid (Meclofenamate) sodium is a non-steroidal anti-inflammatory agent (NSAID). Meclofenamic acid sodium is a non-selective gap-junction blocker and a highly selective inhibitor of fat - and obesity-related enzyme (FTO). Meclofenamic acid sodium has anti-inflammatory and antitumor activities[1][2][3].

In Vitro

Meclofenamic acid sodium (10, 100, 200 mM, 4 days) inhibits the proliferation and migration of haSMCs[1].
Meclofenamic acid sodium (4, 6 μM, 48 h) combines with gefitinib-induced caspase-related apoptosis of resistant NSCLC

cells[2].

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

Cell Cycle Analysis[1]

Cell Line:	haSMCs
Concentration:	10, 100, 200 mM
Incubation Time:	4 days
Result:	Caused a G2/M-phase block

Western Blot Analysis[1]

Cell Line:	haSMCs
Concentration:	10, 100, 200 mM
Incubation Time:	4 days
Result:	Decreased the expression of p44/42 MAPK.

In Vivo

Meclofenamic acid sodium (10 mg/kg/day, intraperitoneally injected for 20 days) shows antitumor activity in mouse prostate tumor model[2].

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

Animal Model:	Prostate tumor model in mice[2]
Dosage:	10 mg/kg
Administration:	i.p.
Result:	Decreased tumor aggression, increased fibrosis, cellular proliferation and vascularity reduction.

CUSTOMER VALIDATION

- Theranostics. 2021 Jul 25;11(17):8464-8479.
- Sensor Actuat B-Chem. 2021, 129983.
- Biomed Opt Express. 2021 Mar 9.
- Biomater Adv. 2023 Sep 22, 213634.

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REFERENCES

[1]. Schober W, et al. Meclofenamic acid for inhibition of human vascular smooth muscle cell proliferation and migration: an in vitro study. Cardiovasc Intervent Radiol. 2002 Jan-Feb;25(1):57-63.

[2]. Chen H, et al. Meclofenamic Acid Restores Gefinitib Sensitivity by Downregulating Breast Cancer Resistance Protein and Multidrug Resistance Protein 7 via FTO/m6A-Demethylation/c-Myc in Non-Small Cell Lung Cancer. Front Oncol. 2022 Apr 21;12:870636.

[3]. Schrier DJ, et al. The topical anti-inflammatory effects of a topical preparation of meclofenamic acid on carrageenan-induced footpad swelling in mice. J Pharm Pharmacol. 1987 Jan;39(1):57-9.

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