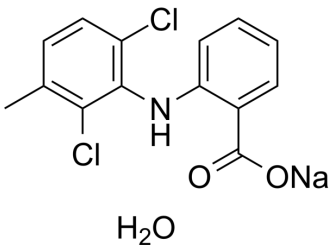
Meclofenamic acid sodium hydrate

Cat. No.:	HY-117275A
CAS No.:	67254-91-5
Molecular Formula:	$C_{14}H_{12}Cl_2NNaO_3$
Molecular Weight:	336.15
Target:	Endogenous Metabolite; Fat Mass and Obesity-associated Protein (FTO); Potassium Channel; Gap Junction Protein
Pathway:	Metabolic Enzyme/Protease; Membrane Transporter/Ion Channel; Cytoskeleton
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Meclofenamic acid (Meclofenamate) sodium hydrate is a non-steroidal anti-inflammatory agent. Meclofenamic acid sodium hydrate is a highly selective FTO (fat mass and obesity-associated) enzyme inhibitor. Meclofenamic acid sodium hydrate competes with FTO binding for the m(6)A-containing nucleic acid. Meclofenamic acid sodium hydrate is a non-selective gap-junction blocker. Meclofenamic acid sodium hydrate inhibits hKv2.1 and hKv1.1, with IC_{50} values of 56.0 and 155.9 μM, respectively[1][2][3][4].
IC_{50} & Target	IC50: 1 μM (cyclooxygenase), 56.0 μM (hKv2.1), 155.9 μM (hKv1.1)[3]
In Vitro	Meclofenamic acid sodium hydrate (0-100 μM, 24 h) inhibits FTO demethylation in a dose-response manner[1]. Meclofenamic acid sodium hydrate inhibits enzyme cyclooxygenase, with an IC_{50} about 1 μM, thereby inhibiting the production of prostaglandins[2]. Meclofenamic acid sodium hydrate inhibits the release of 5-HETE and LTB4 from human neutrophils stimulated with calcium ionophore and antagonizes the response of tissues to certain prostaglandins[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	HeLa cells
Concentration:	0, 12.5, 25, 50, 100 μM
Incubation Time:	24 h
Result:	Inhibited FTO demethylation in a dose-response manner, and elevates the levels of cellular m6A in mRNA by targeting FTO.

CUSTOMER VALIDATION

- Biomed Opt Express. 2021 Mar 9.

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REFERENCES

[1]. Huang Y, et al. Meclofenamic acid selectively inhibits FTO demethylation of m6A over ALKBH5. Nucleic Acids Res. 2015 Jan;43(1):373-84.

[2]. Conroy MC, et al. Pharmacology, pharmacokinetics, and therapeutic use of meclofenamate sodium. Clin J Pain. 1991;7 Suppl 1:S44-8.

[3]. Lee YT, et al. Inhibition of hKv2.1, a major human neuronal voltage-gated K+ channel, by meclofenamic acid. Eur J Pharmacol. 1999 Aug 13;378(3):349-56.

[4]. Eleftheriou CG, et al. Meclofenamic acid improves the signal to noise ratio for visual responses produced by ectopicexpression of human rod opsin. Mol Vis. 2017 Jun 16;23:334-345. eCollection 2017.

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