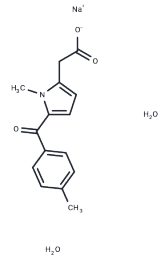
Data Sheet (Cat.No.T2550L)

TargetMol

Tolmetin sodium dihydrate

Chemical Properties



CAS No. : 64490-92-2

Formula: C15H18NNaO5

Molecular Weight: 315.3

Storage: Store at low temperature
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	Tolmetin sodium dihydrate is a potent non-steroidal anti-inflammatory drug (NSAID) that acts as an orally active cyclooxygenase (COX) inhibitor. Tolmetin sodium dihydrate demonstrates inhibitory concentration (IC50) values of 0.35 μM and 0.82 μM for human COX-1 and COX-2 enzymes, respectively, and is widely used as a reference compound for studying the biochemical and pharmacodynamic properties of NSAID-mediated prostaglandin synthesis inhibition.
Targets(IC50)	COX
In vitro	Tolmetin sodium dihydrate (0.25 mM) showed no inhibitory effect on lipid peroxidation in rat brain homogenates [3]. Tolmetin sodium dihydrate (0.001-100 μM) exhibited dose-dependent anticancer activity against HT-29 colon carcinoma cells [4]. Tolmetin sodium dihydrate (0-100 μM) had no significant effect on osteoblast growth [5].
In vivo	In male Wistar rats, the ulcerogenic effect of Tolmetin sodium dihydrate (30, 100 mg/kg, oral administration) reached its peak 4 hours after a single dose, while this effect significantly weakened after repeated administration for 3 and 14 days [2]. Pretreatment with Tolmetin sodium dihydrate (5 mg/kg, twice daily) for 5 consecutive days effectively alleviated quinolinic acid (QA)-induced neurotoxicity [3].

Solubility Information

Solubility	DMSO: 10 mg/mL (31.72 mM),Sonication is recommended. H2O: ≥ 80 mg/mL,Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 1 mg/mL (3.17 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	3.1716 mL	15.8579 mL	31.7158 mL
5 mM	0.6343 mL	3.1716 mL	6.3432 mL
10 mM	0.3172 mL	1.5858 mL	3.1716 mL
50 mM	0.0634 mL	0.3172 mL	0.6343 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

T D Warner, et al. Nonsteroid drug selectivities for cyclo-oxygenase-1 rather than cyclo-oxygenase-2 are associated with human gastrointestinal toxicity: a full in vitro analysis. Proc Natl Acad Sci U S A. 1999 Jun 22;96 (13):7563-8.

Morini G, et al. Morphological features of rat gastric mucosa after acute and chronic treatment with amtolmetin guacyl: comparison with non-selective and COX-2-selective NSAIDs. Digestion. 2003;68(2-3):124-32. Epub 2003 Nov 7.

Dairam A, et al. Non-steroidal anti-inflammatory agents, tolmetin and sulindac, attenuate oxidative stress in rat brain homogenate and reduce quinolinic acid-induced neurodegeneration in rat hippocampal neurons. Metab Brain Dis. 2006 Sep;21(2-3):221-33.

Etcheverry SB, et al. Three new vanadyl(IV) complexes with non-steroidal anti-inflammatory drugs (Ibuprofen, Naproxen and Tolmetin). Bioactivity on osteoblast-like cells in culture. J Inorg Biochem. 2002 Jan 1;88(1):94-100.