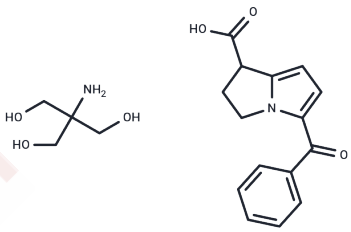
Data Sheet (Cat.No.T1212)

TargetMol

Ketorolac tromethamine salt

Chemical Properties



CAS No. : 74103-07-4

Formula: C19H24N2O6

Molecular Weight: 376.4

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	Ketorolac tromethamine salt (Ketorolac tris salt) non-selective inhibits the enzymes cyclooxygenase 1 (COX-1) and COX-2with anti-inflammatory, analgesic, and antipyretic activities.
Targets(IC50)	COX
In vitro	In models of acetic acid-induced writhing (ID50=0.24 mg/kg), carrageenan-induced hyperalgesia in the paw (ID50=0.29 mg/kg), and carrageenan-induced rat paw edema (ID50=0.08 mg/kg), (R,S)-Ketorolac has demonstrated efficacy.
In vivo	Ketorolac inhibits prostaglandin synthesis in HEL cells (COX-1) (IC50=0.025 μM) and LPS-stimulated Mono Mac 6 cells (COX-2) (IC50=0.039 μM). In human osteoblasts (hOB), Ketorolac dose-dependently suppresses thymidine incorporation and proliferation at the G0/G1 phase, blocking cell cycle progression.
Kinase Assay	Inhibition of Prostaglandin Formation: Recombinant COX-1 and COX-2 from rat (rCOX) and human (hCOX) expressed in a baculovirus system are purified and reconstituted with 2 mM phenol and 1 μM hematin. Then the cyclooxygenase activity is measured using a radiometric assay, and the specific activity of the final enzyme preparations used is between 20,000 and 35,000 units. Ketorolac (2 -15 μL) are diluted in DMSO and preincubated with the appropriate recombinant COX (3 -15 ng) at a final concentration of 0.01 to 1000 μM in a reaction mixture (150 μL) containing 50 mM Tris-HCl buffer (pH 7.9), 2 mM EDTA, 10% glycerol, 2 mM phenol, and 1 μM hematin for 10 minutes. The reaction is initiated by addition of [14C]arachidonic acid (50-60 mCi/mmol in a final concentration of 20 μM) and is terminated 45 seconds later by the addition of 100 μL of 0.2 N HCl and 750 μL of distilled water. The total reaction volume is then applied to a 1 mL C18 Sep-pak column that has previously been washed with 2 mL of methanol followed by 5 mL of deionized water. Oxygenated products are eluted with 3 mL of a mixture of acetonitrile/water/acetic acid (50:50:0.1, v/v/v) and quantified by liquid scintillation spectroscopy.
Cell Research	Human osteoblasts cells are exposed to Ketorolac for 24 hours. Thymidine incorporation is assessed by the TopCount Microplate Scintillation and Luminescence Counters through adding [3H]-thymidine to cultures 4 hours prior to harvesting. Cell cycle distribution is determined by using propidium iodide in flow cytometer, and cell apoptosis or necrosis is detected using the Annexin V-FITC Apoptosis Detection Kit. (Only for Reference)

Solubility Information

Solubility	DMSO: 65 mg/mL (172.69 mM),Sonication is recommended. H2O: 14 mg/mL (37.19 mM),Sonication is recommended. Ethanol: 70 mg/mL (185.97 mM),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: 2 mg/mL (5.31 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	2.6567 mL	13.2837 mL	26.5675 mL
5 mM	0.5313 mL	2.6567 mL	5.3135 mL
10 mM	0.2657 mL	1.3284 mL	2.6567 mL
50 mM	0.0531 mL	0.2657 mL	0.5313 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

Jett MF, et al. J Pharmacol Exp Ther, 1999, 288(3), 1288-1297.
Berg J, et al. Inflamm Res, 1999, 48(7), 369-379.
Chang JK, et al. Toxicology, 2009, 258(2-3), 148-156.
Wallace JL, et al. Gastroenterology, 2000, 119(3), 706-714.