Ketorolac tromethamine salt

Cat. No.: HY-B0138

CAS No.: 74103-07-4

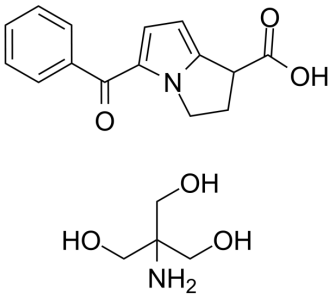
Molecular Formula: $C_{19}H_{24}N_2O_6$

Molecular Weight: 376.4

Target: COX

Pathway: Immunology/Inflammation

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (265.67 mM; Need ultrasonic)
DMSO : ≥ 30 mg/mL (79.70 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
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

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (265.67 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (5.53 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.53 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.53 mM); Clear solution

BIOLOGICAL ACTIVITY

Description Ketorolac tromethamine salt (RS37619 tromethamine salt) is a non-steroidal anti-inflammatory agent, acting as a nonselective COX inhibitor, with IC_{50}s of 20 nM for COX-1 and 120 nM for COX-2.

IC_{50} & Target	COX-1	COX-2

	20 nM (IC_{50})	120 nM (IC_{50})
In Vitro	Ketorolac is a non-steroidal anti-inflammatory agent, acting as a nonselective COX inhibitor, with IC_{50}s of 20 nM for COX-1 and 120 nM for COX-2[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
In Vivo	Ketorolac tromethamine (0.4%) causes nearly complete inhibition on LPS endotoxin-induced increases in FITC-dextran in the anterior chamber, and increases in aqueous PGE2 concentrations in the aqueous humor in rabbits[1].Ketorolac (30 mg/kg, i.v.) rapidly reverses hyperalgesia in rats. Ketorolac also reduces carrageenan-induced hyperalgesia and paw PG production, and causes reduction in PGE2 levels in rats[1]. Ketorolac (4 mg/kg/day, p.o.) has no detrimental effect in the volume fraction of bone trabeculae formed inside the alveolar socket in rats[2]. Ketorolac (60 μg/10 μL) reduces the histological changes such as ischemic cell death, including cytoplasmic eosinophilia with disintegration of cytoarchitecture and nuclear pyknosis in rats. Ketorolac also effectively reduces neuronal death and improves hindlimb motor function, and the long-term survival is similar to that in the control group[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

PROTOCOL

Animal Administration [2]	Rats[2] Treated rats receive oral doses of 1 mL aqueous solution of paracetamol (80 mg/kg/rat/day), Ketorolac (4 mg/kg/day) or etoricoxib (10 mg/kg/day) administered by gavage from the day of surgery until death, 2 weeks later. Control rats receive tap water (1 mL/day by gavage). The animals are housed under climate-controlled environment (12 h light/12 h dark, 20-24°C) with free access to standard laboratory chow and tap water[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Waterbury LD, et al. Comparison of cyclooxygenase inhibitory activity and ocular anti-inflammatory effects of ketorolac tromethamine and bromfenac sodium. Curr Med Res Opin. 2006 Jun;22(6):1133-40.

[2]. Fracon RN, et al. Treatment with paracetamol, ketorolac or etoricoxib did not hinder alveolar bone healing: a histometric study in rats. J Appl Oral Sci. 2010 Dec;18(6):630-4.

[3]. Hsieh YC, et al. Intrathecal ketorolac pretreatment reduced spinal cord ischemic injury in rats. Anesth Analg. 2005 Apr;100(4):1134-9.

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