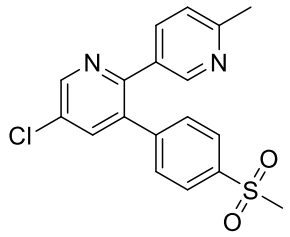
Product data sheet

MedKoo Cat#: 317858 Name: Etoricoxib CAS#: 202409-33-4 Chemical Formula: $C_{18}H_{15}ClN_2O_2S$ Exact Mass: 358.0543 Molecular Weight: 358.8419	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Etoricoxib is a synthetic, nonsteroidal anti-inflammatory drug (NSAID) with antipyretic, analgesic, and potential antineoplastic properties. Etoricoxib specifically binds to and inhibits the enzyme cyclooxygenase-2 (COX-2), resulting in inhibition of the conversion of arachidonic acid into prostaglandins. Inhibition of COX-2 may induce apoptosis and inhibit tumor cell proliferation and angiogenesis.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	85.5	238.27
Ethanol	46.0	128.19

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.79 mL	13.93 mL	27.87 mL
5 mM	0.56 mL	2.79 mL	5.57 mL
10 mM	0.28 mL	1.39 mL	2.79 mL
50 mM	0.06 mL	0.28 mL	0.56 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Kirschneck C, Küchler EC, Wolf M, Spanier G, Proff P, Schröder A. Effects of the Highly COX-2-Selective Analgesic NSAID Etoricoxib on Human Periodontal Ligament Fibroblasts during Compressive Orthodontic Mechanical Strain. Mediators Inflamm. 2019 Mar 10;2019:2514956. doi: 10.1155/2019/2514956. PMID: 30983880; PMCID: PMC6431464.
2. Honjo H, Uwai Y, Iwamoto K. Inhibitory effect of selective cyclooxygenase-2 inhibitor etoricoxib on human organic anion transporter 3 (hOAT3). Drug Metab Lett. 2011 Apr;5(2):140-37. doi: 10.2174/187231211795305285. PMID: 21457143.

In vivo study

1. Ali GF, Omar HA, Hersi F, Abo-Youssef AM, Ahmed OM, Mohamed WR. The protective role of etoricoxib against diethylnitrosamine/2-acetylaminofluorene-induced hepatocarcinogenesis in Wistar rats: The impact of NF-κB/COX-2/PGE2 signaling. Curr Mol Pharmacol. 2021 Jul 7. doi: 10.2174/1874467214666210708103752. Epub ahead of print. PMID: 34238176.
2. Oberberg S, Nottenkämper J, Heukamp M, Krapp J, Willburger RE. Etoricoxib is safe and effective in preventing heterotopic ossification after primary total hip arthroplasty. J Orthop Surg Res. 2021 Feb 27;16(1):163. doi: 10.1186/s13018-021-02297-6. PMID: 33639986; PMCID: PMC7912510.

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7. Bioactivity

Biological target:

Etoricoxib (MK-0663) is a non steroidal anti-inflammatory agent, acting as a selective and orally active COX-2 inhibitor, with IC50s of 1.1 μM and 116 μM for COX-2 and COX-1 in human whole blood.

In vitro activity

Prostaglandin E_2 (PG-E_2) secretion (ELISA, Figure 2(a)) was significantly regulated both by the mechanical strain applied to the hPDL cells and by etoricoxib ($F = 55.08$; $df_{1/2} = 5/13.56$, $p < 0.001$). Force application significantly increased PG-E_2 synthesis in the control group ($p = 0.024$), whereas etoricoxib at cell medium concentrations of 3.29 μM and 5.49 μM significantly inhibited PG-E_2 synthesis in both the presence ($p = 0.002$) and absence ($p < 0.001$) of mechanical compressive strain compared to the respective 0 μM controls.

Reference: Mediators Inflamm. 2019; 2019: 2514956. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6431464/

In vivo activity

HCC was induced by DENA (150 mg/kg/week; i.p) for 2 weeks, then 2AAF (20 mg/kg; p.o) every other day for three successive weeks. Etoricoxib (0.6 mg/kg, p.o.) was given to DENA/2AAF-administered rats for 20 weeks. Etoricoxib significantly suppressed alpha-fetoprotein (AFP) and carbohydrate antigen 19-9 (CA19.9) as liver tumor biomarkers. It also decreased serum aspartate aminotransferase (AST), alanine aminotransferase (ALT), and total bilirubin levels while increasing serum albumin levels. Besides, it alleviated DENA/2AAF-induced histopathological abrasions and inflammatory cell infiltration. Furthermore, etoricoxib showed a potent antioxidant effect, supported by a significant lipid peroxide reduction and elevation in superoxide dismutase and GSH content activity. In addition, Etoricoxib significantly down-regulated the protein expression of interleukin 1 beta (IL-1β), tumor necrosis factor α (TNFα), nuclear Factor-kappa B (NF-κB), phosphorylated nuclear Factor-kappa B (p-NF-κB), cyclooxygenase-2 (COX-2), and prostaglandin E2 (PGE2).

Reference: Curr Mol Pharmacol. 2021 Jul 7. https://pubmed.ncbi.nlm.nih.gov/34238176/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.