Ketoprofen (lysinate)

Cat. No.: HY-B0227A

CAS No.: 57469-78-0

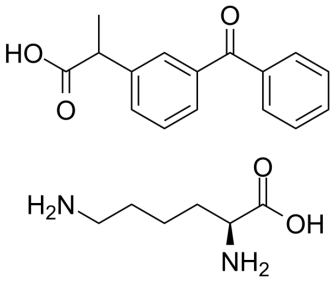
Molecular Formula: $C_{22}H_{28}N_2O_5$

Molecular Weight: 400.47

Target: COX

Pathway: Immunology/Inflammation

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Ketoprofen (RP-19583) lysinate is a non-steroidal anti-inflammatory agent. Ketoprofen lysinate can inhibit the activity of cyclooxygenase with IC_{50} values of 2 nM (COX-1) and 26 nM (COX-2). which is potential in the research of inflammation, immunology, and metabolic disease such as obesity[1][2][3].

IC_{50} & Target

COX-1	COX-2
2 nM (IC_{50})	26 nM (IC_{50})

In Vitro

Ketoprofen lysinate inhibits COX in LPS-stimulated monocytes isolated from human blood, with IC_{50} values of 2 nM (COX-1) and 26 nM (COX-2)[1].

Ketoprofen lysinate (2.5 mg /mL, 3-24h) decreases the mRNA level of immune factors (TNFα, IL-8, SAA and COX-2) and PTGES in LPS-stimulated bovine mammary epithelial cells[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

RT-PCR[3]

Cell Line:	LPS (0.2 μg/mL)-stimulated bovine mammary epithelial cells
Concentration:	2.5 mg /mL
Incubation Time:	3, 6, 24 h
Result:	Decreased the mRNA level of TNFα, IL-8, SAA, COX-2 and PTGES.

In Vivo

Ketoprofen lysinate (Oral administration, 10 mg/kg, three times a week for 10 weeks, HFD-induced obese C57BL/6 mice) decreases in relative body weight (15.41%), the iWAT mass (approximately 41%), and leptin (58.68%) and resistin (12.88%)[2] .

Ketoprofen lysinate (50 mg/kg, LPS-treated dairy cows) lowers the increase of somatic cell count (SCC), serum albumin (SA), IgG and lactate dehydrogenase (LDH) activity in milk induced by LPS[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	HFD-induced obese C57BL/6 mice[2]
Dosage:	10 mg/kg

Administration:	Oral administration, three times a week for 10 weeks
Result:	Decreased in relative body weight, the iWAT mass, and the level of leptin and resistin.

Animal Model:	LPS (0.2 μg/mL)-treated dairy cows [3]
Dosage:	50 mg/kg
Administration:	Injection (Milk samples were taken every 30 min until 6 and 9 h)
Result:	Lowered the increase of somatic cell count (SCC), serum albumin (SA), IgG and lactate dehydrogenase (LDH) activity in milk.

CUSTOMER VALIDATION

- Chemosphere. 2019 Jun;225:378-387.
- Eur J Pharm Sci. 2023 Jul 30;189:106550.
- J Neurotrauma. 2022 Sep 15.

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REFERENCES

[1]. Palomer A, et al. Structure-based design of cyclooxygenase-2 selectivity into ketoprofen. Bioorg Med Chem Lett. 2002 Feb 25;12(4):533-7.

[2]. NamHyeon Kang Ketoprofen alleviates diet-induced obesity and promotes white fat browning in mice via the activation of COX-2 through mTORC1-p38 signaling pathway. Pflugers Arch. 2020 May;472(5):583-596.

[3]. Denisa Dan, et al. Ketoprofen affects the mammary immune response in dairy cows in vivo and in vitro. J Dairy Sci. 2018 Dec;101(12):11321-11329.

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