Ketoprofen

Cat. No.:	HY-B0227		
CAS No.:	22071-15-4		
Molecular Formula:	$C_{16}H_{14}O_{3}$		
Molecular Weight:	254.28		
Target:	COX		
Pathway:	Immunology/Inflammation		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year

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SOLVENT & SOLUBILITY

In Vitro	DMSO : ≥ 100 mg/mL (393.27 mM) H ₂ O : < 0.1 mg/mL (ultrasonic) (insoluble) * "≥" means soluble, but saturation unknown.				
1		Solvent Mass Concentration	1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	3.9327 mL	19.6634 mL	39.3267 mL
		5 mM	0.7865 mL	3.9327 mL	7.8653 mL
		10 mM	0.3933 mL	1.9663 mL	3.9327 mL
	Please refer to the solubility information to select the appropriate solvent.				
In Vivo	 Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (9.83 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (9.83 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (9.83 mM); Clear solution 				
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Description	Ketoprofen (RP-19583) is a non-steroidal anti-inflammatory agent. Ketoprofen can inhibits 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		

Ο

OH

∬ O

2 nM (IC40, in human blood monocytes) 26 nM (IC40, in human blood monocytes) MC (C0X-2) ¹¹ . In Vitro Ketoprofen inhibits COX in LPS-stimulated monocytes isolated from human blood, with IC40, values of 2 nM (C0X-2) and PTGES in LPS- stimulated bovine mammary epithelial cells ^[31] . MC E has not independently confirmed the accuracy of these methods. They are for reference only. RT-PCR ^[31] 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 TNFa, IL-8, SAA, COX 2 and PTGES. In Vivo Retoprofen (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 (S0 mg/kg, LPS-treated dairy cows) lowers the increase of somatic cell count (SCC), serum albumin (SA), Ig6 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. The trans in independently confirmed the accuracy of these methods. They are for reference only.			
In Vitro Ketoprofen (D.3 mg /mL, 3-2/4h) decreases the mRNA level of immune factors (TNFa, IL-8, SAA and COX-2) and PTGES in LPS-stimulated boxine 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 boxine mammary epithelial cells Concentration: 2.5 mg /mL Incubation Time: 3, 6, 24 h Result: Decreased the mRNA level of TNFa, IL-8, SAA, COX-2 and PTGES. In Vivo Ketoprofen (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 (58.69%) and resistin (12.89%) ^[2] . Ketoprofen (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 (58.69%) and resistin (22.89%) ^[2] . 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. The induced obese S7BL/6 mice ^[2] Dosage:		2 nM (IC ₅₀ , in human blood monocytes)	26 nM (IC ₅₀ , in human blood monocytes)
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 TNFq, IL-8, SAA, COX-2 and PTGES. In Vivo Ketoprofen (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+3); the itVAT mass (approximately 41:90), and leptin (58.68%) and resistin (12.88%) ^[2] . Ketoprofen (Son ag/kg, LPS-treated dairy cows) lowers the increase of somatic cell count (SCC), serum albumin (SA), IgG and lactate dehydrogenase (LDH) activity in milk. 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. The source The source of somatic cell count (SCC), serum albumin (SA), IgG and Lectate dehydrogenase (LDH) activity in milk.	In Vitro In Vivo	Ketoprofen inhibits COX in LP nM (COX-2) ^[1] . Ketoprofen (2.5 mg /mL, 3-24 stimulated bovine mammary MCE has not independently co RT-PCR ^[3]	PS-stimulated monocytes isolated from human blood, with IC ₅₀ values of 2 nM (COX-1) and 26 h) decreases the mRNA level of immune factors (TNFα, IL-8, SAA and COX-2) and PTGES in LPS- epithelial cells ^[3] . onfirmed the accuracy of these methods. They are for reference only.
Concentration: 2.5 mg/mL Incubation Time: 3, 6, 24 h Result: Decreased the mRNA level of TNFq, IL-8, SAA, COX-2 and PTGES. In Vivo Ketoprofen (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 (50 mg/kg, LPS-treated dairy cows) lowers the increase of somatic cell count (SCC), serum albumin (SA), IgG and Lattet dehydrogenase (LDH) activity in milk induced by LPS ^[3] . MCE has not independent/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. Thimal 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.		Cell Line:	LPS (0.2 $\mu g/mL)$ -stimulated bovine mammary epithelial cells
Incubation Time: 3, 6, 24 h Result: Decreased the mRNA level of TNFα, IL-8, SAA, COX-2 and PTGES. In Vivo Ketoprofen (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 (50 mg/kg, ID-5+treated dairy cows) lowers the increase of somatic cell count (SCC), serum albumin (SA), IgG and lactate dehydrogenase (LDH) artivity in milk induced by LPS ^[3] . MCE has not independently criterined 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. HFD induced bese core (S) mg/kg LPS (0.2 µg/mL)-treated dairy cows ^[3] Administration: 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.		Concentration:	2.5 mg /mL
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In Vivo Ketoprofen (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 (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.		Result:	Decreased the mRNA level of TNF α , IL-8, SAA, COX-2 and PTGES.
Animal Model:HFD-induced obese C57BL/6 mice ^[2] Dosage:10 mg/kgAdministration:Oral administration, three times a week for 10 weeksResult: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/kgAdministration: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.		relative body weight (15.41%) Ketoprofen (50 mg/kg, LPS-tr lactate dehydrogenase (LDH) MCE has not independently co), the iWAT mass (approximately 41%), and leptin (58.68%) and resistin (12.88%) ^[2] . eated dairy cows) lowers the increase of somatic cell count (SCC), serum albumin (SA), IgG and activity in milk induced by LPS ^[3] . onfirmed the accuracy of these methods. They are for reference only.
Dosage:10 mg/kgAdministration:Oral administration, three times a week for 10 weeksResult: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/kgAdministration: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.		Animal Model:	HFD-induced obese C57BL/6 mice ^[2]
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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/kgAdministration: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.		Administration:	Oral administration, three times a week for 10 weeks
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		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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[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.

Caution: Product has not been fully validated for medical applications. For research use only.

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