Aceclofenac

Cat. No.: HY-B0634

CAS No.: 89796-99-6

Molecular Formula: $C_{16}H_{13}Cl_2NO_4$

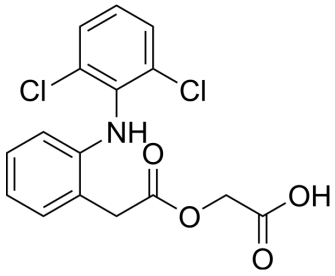
Molecular Weight: 354.18

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (282.34 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.8234 mL	14.1171 mL	28.2342 mL
5 mM	0.5647 mL	2.8234 mL	5.6468 mL
10 mM	0.2823 mL	1.4117 mL	2.8234 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.06 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.06 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.06 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Aceclofenac is an orally active nonsteroidal anti-inflammatory agent (NSAID), with analgesic and anti-inflammatory properties. Aceclofenac is used for the research of osteoarthritis, ankylosing spondylitis, rheumatoid arthritis[1][2].

IC_{50} & Target

COX-2	COX-1
3 μM (IC_{50})	7.3 μM (IC_{50})

In Vitro	Aceclofenac (1-30 μM; 72 hours) significantly decreases interleukin-6 production and fully blocks prostaglandin E_2 synthesis by IL-1β- or LPS-stimulated human chondrocytes[1]. Aceclofenac inhibits COX-1 with IC_{50} values superior to 100 μM, but decreases by 50% COX-2 activity at the concentration of 0.77 μM in the whole blood test[1]. Aceclofenac increases the synthesis of interleukin 1 receptor antagonist and decreases the production of nitric oxide in human articular chondrocytes[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Aceclofenac exhibits C_{max} (4.59 μg/mL) following oral administration (rat 20 mg/kg)[3]. Aceclofenac exhibits terminal elimination half-life (rat 3.24 h) due to high plasma clearance (rat 1.10 L/h/kg) following intravenous injection (rat 10 mg/kg)[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Sprague-Dawley rats weighing 32-340 g[3]
Dosage:	10 mg/kg for i.v., 20 mg/kg for p.o. (Pharmacokinetic Analysis)
Administration:	Oral administration and intravenous injection
Result:	$T_{1/2}$ (3.24 h), C_{max} (4.59 μg/mL for p.o.).

REFERENCES

[1]. Y Henrotin, et al. In vitro effects of aceclofenac and its metabolites on the production by chondrocytes of inflammatory mediators. Inflamm Res. 2001 Aug;50(8):391-9.

[2]. E Maneiro, et al. Aceclofenac increases the synthesis of interleukin 1 receptor antagonist and decreases the production of nitric oxide in human articular chondrocytes. J Rheumatol. 2001 Dec;28(12):2692-9.

[3]. E Maneiro, et al. Keumhan Noh, et al. Absolute bioavailability and metabolism of aceclofenac in rats. Arch Pharm Res. 2015 Jan;38(1):68-72.

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