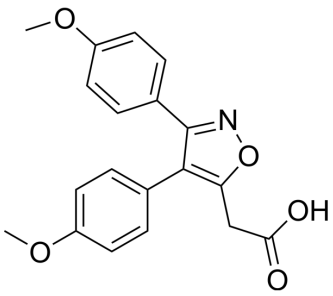
Mofezolac



Cat. No.:	HY-120824
CAS No.:	78967-07-4
Molecular Formula:	$C_{19}H_{17}NO_5$
Molecular Weight:	339.34
Target:	COX
Pathway:	Immunology/Inflammation
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month

SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (294.69 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9469 mL	14.7345 mL	29.4690 mL
	5 mM	0.5894 mL	2.9469 mL	5.8938 mL
	10 mM	0.2947 mL	1.4734 mL	2.9469 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 (7.37 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.37 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.37 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Mofezolac, a non-steroidal anti-inflammatory drug (NSAID), is a selective, reversible and orally active COX-1 inhibitor with an IC_{50} of 1.44 nM. Mofezolac shows weak inhibitory activity on COX-2 (IC_{50} of 447 nM). Mofezolac can relieve pain and has anti-inflammatory activities[1].

IC_{50} & Target

COX-1	COX-2
1.44 nM (IC_{50})	447 nM (IC_{50})

In Vitro

Mofezolac inhibits platelet aggregation with an IC_{50} of 0.45 μM in human platelet rich plasma (hPRP) assay[2].

	Mofezolac slightly increase Bortezomib cytotoxic effect on multiple myeloma (MM) cell lines (NCI-H929 and RPMI-8226) and affects MM cell cycle and apoptosis when co-administered with the proteasome inhibitor Bortezomib[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Mofezolac (1-30 mg/kg; oral administration; once) treatment results in the suppression of writhing induced by the intraperitoneal injection of phenyl-p-benzoquinone in mice[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female ddY mice (4 week old, 18-27 g) injected with phenyl-p-benzoquinone (PQ)[1]
Dosage:	1 mg/kg, 3 mg/kg, 10 mg/kg, 30 mg/kg
Administration:	Oral administration; once
Result:	Dose-dependently suppressed the writhing induced by PQinjection in mice.

CUSTOMER VALIDATION

- Life Sci. 2022 Sep 22;120994.

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REFERENCES

[1]. K Goto, et al. Analgesic effect of mofezolac, a non-steroidal anti-inflammatory drug, against phenylquinone-induced acute pain in mice. Prostaglandins Other Lipid Mediat. 1998 Jul;56(4):245-54.

[2]. Maria Laura Pati, et al. Translational impact of novel widely pharmacological characterized mofezolac-derived COX-1 inhibitors combined with bortezomib on human multiple myeloma cell lines viability. Eur J Med Chem. 2019 Feb 15;164:59-76.

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