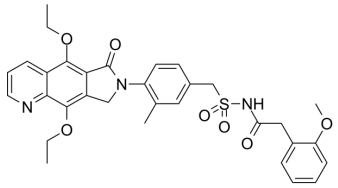
MF498

Cat. No.:	HY-10794
CAS No.:	915191-42-3
Molecular Formula:	$C_{32}H_{33}N_3O_7S$
Molecular Weight:	603.69
Target:	Prostaglandin Receptor
Pathway:	GPCR/G Protein
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 : ≥ 31 mg/mL (51.35 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.6565 mL	8.2824 mL	16.5648 mL
5 mM	0.3313 mL	1.6565 mL	3.3130 mL
10 mM	0.1656 mL	0.8282 mL	1.6565 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 (4.14 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.14 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.14 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MF498 is a selective and orally active E prostanoid Receptor 4 (EP4) antagonist with a K_i value of 0.7 nM. MF498 can be used in the research of inflammation, such as rheumatoid and osteoarthritis[1][2].

IC_{50} & Target

EP4

0.7 nM (Ki)

In Vitro

MF498 (0.01 nM-10 μM, 30 min) inhibits PGE2-stimulated cAMP accumulation with IC_{50} values of 1.7 and 17 nM in the absence and presence of 10% serum, respectively[1].
MF498 (0.01 and 0.1 μM, 30 min) inhibits FBS and PDGF-BB-induced VSMC proliferation in rat VSMCs[2].
MF498 (0.1 μM, 30 min) reduced PDGF-induced cyclin D1 and PCNA expression in rat VSMCs[2].
MF498 (0.1 μM, 30 min) inhibits the PDGF-BB-induced migration[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	Rat VSMCs
Concentration:	0.01 nM-10 μM
Incubation Time:	30 min before FBS treating.
Result:	Inhibited FBS and PDGF-BB-induced VSMC proliferation.

In Vivo

MF498 (0-20 mg/kg, p.o.) inhibits paw swelling in rats with adjuvant-induced arthritis (AIA)[1].
MF498 (0-30 mg/kg, p.o.) attenuates the EP4 agonist-(L-902688)-induced hyperalgesia in guinea pigs[1].
MF498 (20 mg/kg, p.o.) shows 100% bioavailability, resulting in plasma concentration of 1.2 μM at 6 h[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Rats with adjuvant-induced arthritis (AIA)[1]
Dosage:	0, 0.008, 0.04, 0.2, 2, 20 mg/kg
Administration:	Oral administration (p.o.)
Result:	Showed anti-inflammatory effect in both the primary and secondary paw.

CUSTOMER VALIDATION

- J Virol. 2018 Sep 26;92(20):e01018-18.

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REFERENCES

[1]. Xu H, et al. The Prostaglandin E2 Receptor EP4 Promotes Vascular Neointimal Hyperplasia through Translational Control of Tenascin C via the cAPM/PKA/mTORC1/rpS6 Pathway. Cells. 2022 Aug 31;11(17):2720.

[2]. Clark P, et al. MF498 [N-{[4-(5,9-Diethoxy-6-oxo-6,8-dihydro-7H-pyrrolo[3,4-g]quinolin-7-yl)-3-methylbenzyl]sulfonyl}-2-(2-methoxyphenyl)acetamide], a selective E prostanoid receptor 4 antagonist, relieves joint inflammation and pain in rodent models of rheumatoid and osteoarthritis. J Pharmacol Exp Ther. 2008 May;325(2):425-434.

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