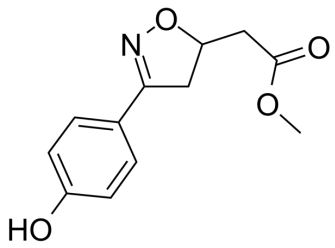
ISO-1

Cat. No.:	HY-16692		
CAS No.:	478336-92-4		
Molecular Formula:	$C_{12}H_{13}NO_4$		
Molecular Weight:	235.24		
Target:	Others		
Pathway:	Others		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (212.55 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.2510 mL	21.2549 mL	42.5098 mL
	5 mM	0.8502 mL	4.2510 mL	8.5020 mL
	10 mM	0.4251 mL	2.1255 mL	4.2510 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 (10.63 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (10.63 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.63 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ISO-1 is a macrophage migration inhibitory factor (MIF) antagonist with an IC_{50} of 7 μM.

IC_{50} & Target

IC50: 7 μM (MIF)[1]

In Vitro

ISO-1 (0.1-20 μM; 16 hours) has a slight inhibitory effect on Cox-2 secretion without the addition of recombinant MIF[1].

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

Western Blot Analysis[1]

Cell Line:	RAW 264.7 macrophage cells
Concentration:	0.1μM、1μM、10μM、20μM
Incubation Time:	16 hours
Result:	Suppressed Cox-2 secretion.

In Vivo

ISO-1 (injected intraperitoneally; 3.5-35 mg/kg; twice daily; 2 weeks) improves the survival rate from lethal endotoxemia and shows the anti-inflammatory effect[2].

ISO-1 (intraperitoneal injection; 35 mg/kg; twice daily; 3 days) causes a significant reduction in average implant size and decreases Flk1 expression in implants[3].

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

Animal Model:	C57Bl/6 $MIF^{+/+}$ and $MIF^{-/-}$ mice[2]
Dosage:	3.5-35 mg/kg
Administration:	Injected intraperitoneally; 3.5-35 mg/kg; twice a day ; 2 weeks
Result:	Was protective against lethal sepsis.

Animal Model:	Female C57BL/6-Tg(ACTB-EGFP)1Osb/J mice[3]
Dosage:	35 mg/kg
Administration:	Intraperitoneal injection; 35 mg/kg; twice daily; 3 days
Result:	Reduced average endometriotic implant size.

CUSTOMER VALIDATION

- J Neuroinflammation. 2018 Oct 19;15(1):291.
- Front Cell Dev Biol. 31 December 2021.
- Mol Ther Oncolytics. 19 August 2021.
- Int Immunopharmacol. 2021 Apr 3;96:107555.
- Mol Med Rep. 2019 Sep;20(3):2135-2142.

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REFERENCES

[1]. Lubetsky JB, et al. The tautomerase active site of macrophage migration inhibitory factor is a potential target for discovery of novel anti-inflammatory agents. J Biol Chem. 2002 Jul 12;277(28):24976-82.

[2]. Al-Abed Y, et al. ISO-1 binding to the tautomerase active site of MIF inhibits its pro-inflammatory activity and increases survival in severe sepsis. J Biol Chem. 2005 Nov 4;280(44):36541-4.

[3]. Nothnick WB, et al. Inhibition of macrophage migration inhibitory factor reduces endometriotic implant size in mice with experimentally induced disease. J Endometr.

2011 Sep 30;3(3):135-142.

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