MIF098

Cat. No.: HY-147390

CAS No.: 1208448-95-6

Molecular Formula: $C_{15}H_{13}NO_3$

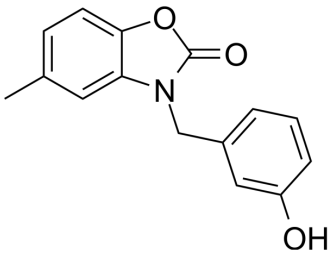
Molecular Weight: 255.27

Target: Macrophage migration inhibitory factor (MIF)

Pathway: Immunology/Inflammation

Storage: 4°C, stored under nitrogen

* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 180 mg/mL (705.14 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.9174 mL	19.5871 mL	39.1742 mL
5 mM	0.7835 mL	3.9174 mL	7.8348 mL
10 mM	0.3917 mL	1.9587 mL	3.9174 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: ≥ 5 mg/mL (19.59 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 5 mg/mL (19.59 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 5 mg/mL (19.59 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MIF098 is a macrophage migration inhibitory factor (MIF) antagonist. MIF098 inhibits proliferation, migration and fibrosis of pulmonary smooth muscle cells. MIF098 can be used for immunoinflammation-related disease research[1].

In Vitro

MIF098 (0-10 μM, 48 h) inhibits mPASMC cell proliferation and migration in a concentration-dependent manner, by blocking the migration inhibitory factor (MIF) pathway[1].

MIF098 reduces collagen synthesis and pulmonary artery fibrosis by inhibiting the TGFβ1/Smad2/3 pathway[1].

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

Western Blot Analysis[1]

Cell Line:	Mouse pulmonary artery smooth muscle cells (mPASMCs)
Concentration:	0-10 μM
Incubation Time:	48 hours
Result:	Reduced expression of cell cycle related proteins such as cyclin D1, CDK4 and CDK6 in PDGF-BB and increased expression of cell-cycle arrest proteins such as P53 and P21. Reduced TGFβ1-induced fibronectin (FN), collagen I (col I), and collagen II (col II) expression and phosphorylation of Smad2 and Smad3.

In Vivo

MIF098 (intraperitoneal injection, 40 mg/kg, once a day, 4 weeks) attenuates the process of hypoxia-induced pulmonary arterial hypertension in C57BL/6J mice[1].

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

Animal Model:	Hypoxic male C57BL/6J mice[1]
Dosage:	40 mg/kg
Administration:	Intraperitoneal injection; once a day; 4 weeks
Result:	Reduced right ventricular systolic pressure (RVSP), percentage medial wall thickness, muscularization and right ventricle collagen deposition. Decreased percentage of collagen fibers in pulmonary artery (PA).

REFERENCES

[1]. HuijingHuang, et al. The small molecule macrophage migration inhibitory factor antagonist MIF098, inhibits pulmonary hypertension associated with murine SLE. Int Immunopharmacol. 2019 Nov;76:105874.

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