MMP2-IN-1

Cat. No.: HY-146754

CAS No.: 2764598-01-6

Molecular Formula: $C_{15}H_{13}NO_5S$

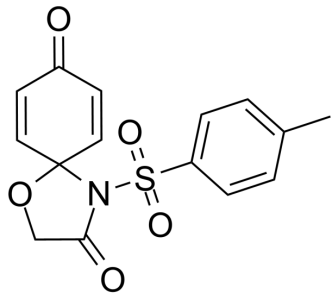
Molecular Weight: 319.33

Target: MMP; Apoptosis

Pathway: Metabolic Enzyme/Protease; Apoptosis

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 : 100 mg/mL (313.16 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.1316 mL	15.6578 mL	31.3156 mL
	5 mM	0.6263 mL	3.1316 mL	6.2631 mL
	10 mM	0.3132 mL	1.5658 mL	3.1316 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 (7.83 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (7.83 mM); Clear solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 2.5 mg/mL (7.83 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

MMP2-IN-1 is a moderate potenet MMP2 inhibitor with IC_{50} of 6.8 μM. MMP2-IN-1 exhibits remarkable antiproliferative activity in certain cancer cells by arresting the cell cycle and inducing apoptosis[1].

IC_{50} & Target

MMP2
6.8 μM (IC_{50})

In Vitro

MMP2-IN-1 (compound 4a) (0-10 μM; 74 hours) exhibits IC_{50} values of 0.07 μM, 0.11 μM, and 0.18 μM against MDA-MB-231,

A549, and HeLa cancer cells, respectively, and over 10 μM in Hep 5G cells[1].
MMP2-IN-1 (10 μM; 24 hours) induces cell cycle arrest in the S phase[1].
MMP2-IN-1 (0.01 μM, 0.1 μM, 1 μM and 10 μM; 24 hours) induces a dose-dependent increment in early-and late-stage apoptosis of MDA-MB-231 cells, and increased the early-stage apoptosis percentage from 4.66% to 10.9% at 10 μM[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay

Cell Line:	MDA-MB-231, A549, HeLa and Hep 5G cells[1]
Concentration:	0-10 μM
Incubation Time:	74 hours
Result:	Exhibited IC_{50} values of 0.07 μM, 0.11 μM, and 0.18 μM against MDA-MB-231, A549, and HeLa cancer cells, respectively, and over 10 μM in Hep 5G cells.

Cell Cycle Analysis

Cell Line:	MDA-MB-231[1]
Concentration:	10 μM
Incubation Time:	24 hours
Result:	Induced cell cycle arrest in the S phase.

Apoptosis Analysis

Cell Line:	MDA-MB-231[1]
Concentration:	0.01 μM, 0.1 μM, 1 μM and 10 μM
Incubation Time:	24 hours
Result:	Induced a dose-dependent increment in early-and late-stage apoptosis of MDA-MB-231 cells, and increased the early-stage apoptosis percentage from 4.66% to 10.9% at 10 μM.

In Vivo

MMP2-IN-1 (100 mg/kg, 150 mg/kg, 200 mg/kg, 250 mg/kg; IP, single) causes 0%, 30%, 50% and 60% mortality rate at dosing 100 mg/kg, 150 mg/kg, 200 mg/kg and 250 mg/kg respectively[1].
MMP2-IN-1 (10 mg/kg; IP, daily, for 14 days) significantly inhibits tumor growth in metastatic 4T1 murine breast cancer model[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Kunming mice (n = 10, half male and half female)[1]
Dosage:	100 mg/kg, 150 mg/kg, 200 mg/kg, 250 mg/kg
Administration:	IP, single
Result:	No mortality occurred after administration of 100 mg/kg, and the mortality rate was 30%, 50% and 60% at dosing 150 mg/kg, 200 mg/kg, 250 mg/kg respectively.

Animal Model:	Orthotopic 4T1 tumor-bearing mice[1]
Dosage:	10 mg/kg

Administration:	IP, daily, for 14 days
Result:	Significantly inhibited tumor growth in metastatic 4T1 murine breast cancer model.

REFERENCES

[1]. Chen C, Luo Y, Yin H, et al. Design, synthesis, and antitumor activity evaluation of novel acyl sulfonamide spirodienones. Bioorg Med Chem. 2022;60:116626.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA