MMP-9-IN-1

Cat. No.: HY-135232

CAS No.: 502887-71-0

Molecular Formula: $C_{16}H_{17}F_2N_3O_3S$

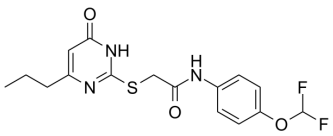
Molecular Weight: 369.39

Target: MMP

Pathway: Metabolic Enzyme/Protease

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 : 66.67 mg/mL (180.49 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7072 mL	13.5358 mL	27.0717 mL
	5 mM	0.5414 mL	2.7072 mL	5.4143 mL
	10 mM	0.2707 mL	1.3536 mL	2.7072 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 >> 50% PBS
   Solubility: 5 mg/mL (13.54 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.63 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MMP-9-IN-1 is a specific matrix metalloproteinase-9 (MMP-9) inhibitor, which selectively target the hemopexin (PEX) domain of MMP-9, but not other MMPs[1].

IC_{50} & Target

MMP-9

In Vitro

MMP-9-IN-1 (compound 2; 100 μM; 14 hours) does not cause notable cytotoxicity[1].

MMP-9-IN-1 (compound 2; 10 μM) significantly inhibits cell proliferation of HT-1080 and MDA-MB-435 cells[1].

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

Cell Cytotoxicity Assay[1]

Cell Line:	COS-1 monkey epithelial cell lines
Concentration:	100 μM
Incubation Time:	24 hours
Result:	Treatment did not cause notable cytotoxicity.

Cell Proliferation Assay[1]

Cell Line:	HT-1080 and MDA-MB-435 cancer cells expressing endogenous MMP-9
Concentration:	10 μM
Incubation Time:	9 days
Result:	Significant inhibition of cell proliferation.

In Vivo

MMP-9-IN-1 (compound 2; 20 mg/kg; intraperitoneal and intratumoral injection alternately; 6 days/week; for 14 weeks) results in a profound delay in tumor growth in NCR-Nu mice bearing MDA-MB-435/GFP tumor[1].
MMP-9-IN-1 inhibits cancer cell metastasis in vivo[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	4-5 week-old female NCR-Nu mice bearing MDA-MB-435/GFP tumor[1]
Dosage:	20 mg/kg
Administration:	Intraperitoneal and intratumoral injection alternately; 6 days/week; for 14 weeks,
Result:	Resulted in a profound delay in tumor growth. Inhibited cancer cell metastasis.

CUSTOMER VALIDATION

- J Cell Mol Med. 2020 Sep;24(18):10604-10614.
- Eur J Pharmacol. 2023 Jun 23;175858.
- J Inflamm Res. 2021 Apr 12;14:1375-1385.
- Int J Morphol. 2023 Aug, 41(4):1152-1157.

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REFERENCES

[1]. Dufour A, et al. Small-molecule anticancer compounds selectively target the hemopexin domain of matrix metalloproteinase-9. Cancer Res. 2011 Jul 15;71(14):4977-88.

[2]. Alford VM, Kamath A, Ren X, et al. Targeting the Hemopexin-like Domain of Latent Matrix Metalloproteinase-9 (proMMP-9) with a Small Molecule Inhibitor Prevents the Formation of Focal Adhesion Junctions. ACS Chem Biol. 2017;12(11):2788-2803.

Caution: Product has not been fully validated for medical applications. For research use only.

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