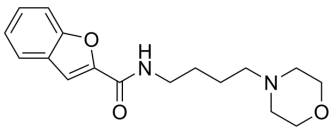
CL-82198

Cat. No.:	HY-100359
CAS No.:	307002-71-7
Molecular Formula:	$C_{17}H_{22}N_2O_3$
Molecular Weight:	302.37
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 : 100 mg/mL (330.72 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.3072 mL	16.5360 mL	33.0721 mL
	5 mM	0.6614 mL	3.3072 mL	6.6144 mL
	10 mM	0.3307 mL	1.6536 mL	3.3072 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 (8.27 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.27 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.27 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

CL-82198 is a selective inhibitor of MMP-13. CL-82198 binds to the entire S1' pocket of MMP-13, which is the basis for its selectivity towards MMP-13 and the lack of inhibitory activities against other MMPs[1][2]. CL-82198 is a pharmacologic treatment for preventing osteoarthritis (OA) progression[4].

In Vitro

CL-82198 (10 μM; 24 hours) significantly reduces LS174 cell migration[1].
CL-82198 decreases CTGF and TGF-β1 protein levels in hepatic stellate cells[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

CL82198 (1-10 mg/kg; i.p.; every other day for 12 weeks) prevents and decelerates MLI-induced osteoarthritis progression[4].

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Animal Model:	10-week-old C57BL/6J mice (performed MLI surgery)[4]
Dosage:	1, 5, 10 mg/kg body weight
Administration:	Intraperitoneal injection; every other day for 12 weeks
Result:	Prevented and decelerated MLI-induced osteoarthritis progression.

CUSTOMER VALIDATION

- Cell Stem Cell. 2023 May 4;30(5):648-664.e8.
- Nat Commun. 2022 Jul 11;13(1):4007.
- J Cell Physiol. 2019 Sep;234(9):15395-15406.
- Mar Drugs. 2023 Jul 31, 21(8), 433.

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REFERENCES

[1]. Rath T et al. Matrix metalloproteinase-13 is regulated by toll-like receptor-9 in colorectal cancer cells and mediates cellular migration. Oncol Lett. 2011 May;2(3):483-488.

[2]. Wohlauer M et al. Nebulized hypertonic saline attenuates acute lung injury following trauma and hemorrhagic shock via inhibition of matrix metalloproteinase-13. Crit Care Med. 2012 Sep;40(9):2647-53.

[3]. George J, et al. MMP-13 deletion decreases profibrogenic molecules and attenuates N-nitrosodimethylamine-induced liver injury and fibrosis in mice. J Cell Mol Med. 2017 Dec;21(12):3821-3835.

[4]. Wang M,et al. MMP13 is a critical target gene during the progression of osteoarthritis. Arthritis Res Ther. 2013 Jan 8;15(1):R5.

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