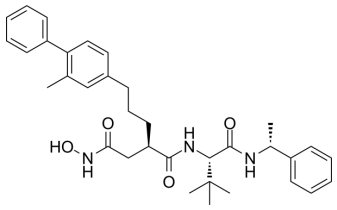
UK 356618

Cat. No.:	HY-107394
CAS No.:	230961-08-7
Molecular Formula:	$C_{34}H_{43}N_3O_4$
Molecular Weight:	557.72
Target:	MMP
Pathway:	Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (44.83 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
	1 mM	1.7930 mL	8.9651 mL	17.9301 mL
	5 mM	0.3586 mL	1.7930 mL	3.5860 mL
	10 mM	0.1793 mL	0.8965 mL	1.7930 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

UK 356618 (Compound 4j) is a potent and selective inhibitor of matrix metalloprotease-3 (MMP-3) with an IC_{50} of 5.9 nM. UK 356618 is less potent against MMP-1, MMP-2, MMP-9, MMP-13 and MMP-14 compared with MMP-3[1].

IC_{50} & Target

MMP-3 5.9 nM (IC_{50})	MMP-13 73 nM (IC_{50})	MMP-9 0.84 μM (IC_{50})	MMP-2 1.79 μM (IC_{50})
MMP-14 1.9 μM (IC_{50})	MMP-1 51 μM (IC_{50})		

In Vitro

Inhibition of MMP-3 and selectivity over MMP-2 was remarkably sensitive to the size of the substituent and is clearly optimal for a methyl group (UK 356618, compound 4j). UK 356618 is more widely profiled against other MMPs[1].

MMP-13 is closely involved in IL-6 or TNF-α increasing tumor metastasis. MMP-13 deficiency abrogate TNF-α effect on lung cancer cell migration. UK 356618 treatment efficiently abolished the effect of TNF-α on cell migration in NCI-H446 cells[2].

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

In Vivo

UK 356618 (15 mg/kg; intravenous injection; for 24 h or 7 days; male Wistar rats) treatment at reperfusion significantly

reduces MMP3 activity in the brain[3].

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

Animal Model:	Hyperglycemic male Wistar rats injected with middle cerebral artery occlusion (MCAO)[3]
Dosage:	15 mg/kg
Administration:	Intravenous injection; for 24 h or 7 days
Result:	Significantly reduced MMP3 activity in the brain.

CUSTOMER VALIDATION

- Antioxidants (Basel). 2023 Sep 25, 12(10), 1800.
- J Bone Miner Res. 2022 Nov 12.
- PLoS One. 2022 Nov 29;17(11):e0278220.

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REFERENCES

[1]. Fray MJ, et al. Discovery of potent and selective succinyl hydroxamate inhibitors of matrix metalloprotease-3 (stromelysin-1). Bioorg Med Chem Lett. 2001 Feb 26;11(4):571-4.

[2]. Yan HQ, et al. Ataxia-telangiectasia mutated activation mediates tumor necrosis factor-alpha induced MMP-13 up-regulation and metastasis in lung cancer cells. Oncotarget. 2016 Sep 20;7(38):62070-62083.

[3]. Hafez S, et al. Matrix Metalloprotease 3 Exacerbates Hemorrhagic Transformation and Worsens Functional Outcomes in Hyperglycemic Stroke. Stroke. 2016 Mar;47(3):843-51.

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