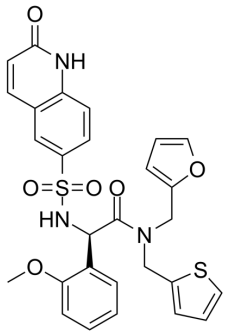
OSMI-1

Cat. No.:	HY-119738
CAS No.:	1681056-61-0
Molecular Formula:	$C_{28}H_{25}N_3O_6S_2$
Molecular Weight:	563.64
Target:	Acyltransferase
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 (177.42 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7742 mL	8.8709 mL	17.7418 mL
	5 mM	0.3548 mL	1.7742 mL	3.5484 mL
	10 mM	0.1774 mL	0.8871 mL	1.7742 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: 2.08 mg/mL (3.69 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.69 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

OSMI-1 is a cell-permeable O-GlcNAc transferase (OGT) inhibitor with an IC_{50} value of 2.7 μM. OSMI-1 inhibits protein O-linked N-acetylglucosamine (O-GlcNAcylation) in several mammalian cell lines without qualitatively altering cell surface N- or O-linked glycans[1][2].

IC_{50} & Target

IC50: 2.7 μM (O-GlcNAc transferase)[1]

In Vitro

OSMI-1 (50 μM; 24 hours; CHO cells) treatment decreases the viability by about 50% after 24 hours[1].
OSMI-1 (10-100 μM; 24 hours; CHO cells) treatment reduces global O-linked N-acetylglucosamine (O-GlcNAcylation) a dose-dependent manner. OSMI-1 inhibits OGT activity in cells[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	CHO cells
Concentration:	50 μM
Incubation Time:	24 hours
Result:	Viability decreased by about 50% after 24 hours.

Western Blot Analysis[1]

Cell Line:	CHO cells
Concentration:	10 μM, 25 μM, 50 μM, 100 μM
Incubation Time:	24 hours
Result:	Reduced global OGlcNAcylation in a dose-dependent manner.

In Vivo

Mammalian and zebrafish toxicity profiles are strikingly similar, and zebrafish can usually serve as an intermediate step between cell-based evaluation and conventional animal testing. The zebrafish model is used to investigate OSM1-1 acute toxicity in vivo. The LC_{50} of OSM1-1 is 0.031 mg/mL (56 μM, 12 h) and 0.025 mg/mL (45 μM, 24 h) in zebrafish model[2].

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

CUSTOMER VALIDATION

- Signal Transduct Target Ther. 2023 Feb 10;8(1):63.
- Nat Commun. 2024 Jan 4;15(1):252.
- Clin Transl Med. 2024 Jan;14(1):e1531.
- Cell Commun Signal. 2023 Sep 22;21(1):255.
- Cell Death Discov. 2023 May 15;9(1):163.

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REFERENCES

[1]. Ortiz-Meoz RF, et al. A small molecule that inhibits OGT activity in cells. ACS Chem Biol. 2015 Jun 19;10(6):1392-7.

[2]. Liu Y, et al. Discovery of a Low Toxicity O-GlcNAc Transferase (OGT) Inhibitor by Structure-based Virtual Screening of Natural Products. Sci Rep. 2017 Sep 26;7(1):12334.

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