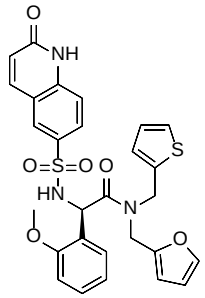
Product data sheet

MedKoo Cat#: 562300 Name: OSMI-1 CAS: 1681056-61-0 Chemical Formula: $C_{28}H_{25}N_3O_6S_2$ Exact Mass: 563.1185 Molecular Weight: 563.643	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
OSMI-1 is an inhibitor of O-GlcNAc transferase (OGT).

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	25.0	44.35
DMF:PBS (pH 7.2) (1:5)	0.16	0.28
DMSO	73.33	130.11

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.77 mL	8.87 mL	17.74 mL
5 mM	0.35 mL	1.77 mL	3.55 mL
10 mM	0.18 mL	0.89 mL	1.77 mL
50 mM	0.04 mL	0.18 mL	0.35 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Papanicolaou KN, Jung J, Ashok D, Zhang W, Modaressanavi A, Avila E, Foster DB, Zachara NE, O'Rourke B. Inhibiting O-GlcNAcylation impacts p38 and Erk1/2 signaling and perturbs cardiomyocyte hypertrophy. J Biol Chem. 2023 Mar;299(3):102907. doi: 10.1016/j.jbc.2023.102907. Epub 2023 Jan 13. PMID: 36642184; PMCID: PMC9988579.
2.Ortiz-Meoz RF, Jiang J, Lazarus MB, Orman M, Janetzko J, Fan C, Duveau DY, Tan ZW, Thomas CJ, Walker S. A small molecule that inhibits OGT activity in cells. ACS Chem Biol. 2015 Jun 19;10(6):1392-7. doi: 10.1021/acschembio.5b00004. Epub 2015 Mar 18. PMID: 25751766; PMCID: PMC4475500.

In vivo study

1. Lee SJ, Kwon OS. O-GlcNAc Transferase Inhibitor Synergistically Enhances Doxorubicin-Induced Apoptosis in HepG2 Cells. Cancers (Basel). 2020 Oct 27;12(11):3154. doi: 10.3390/cancers12113154. PMID: 33121131; PMCID: PMC7693581.

7. Bioactivity
Biological target:

OSMI-1 is an inhibitor of O-GlcNAc transferase (OGT).

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In vitro activity

This study reports a small molecule OGT inhibitor, OSMI-1, developed from a high-throughput screening hit. It is cell-permeable and inhibits protein O-GlcNAcylation in several mammalian cell lines without qualitatively altering cell surface N- or O-linked glycans. The development of this molecule validates high-throughput screening approaches for the discovery of glycosyltransferase inhibitors, and further optimization of this scaffold may lead to yet more potent OGT inhibitors useful for studying OGT in animal models.

Reference: ACS Chem Biol. 2015 Jun 19;10(6):1392-7. https://pubmed.ncbi.nlm.nih.gov/25751766/

In vivo activity

This study demonstrated that the combination of DOX and OSMI-1 stimulated cell death, dramatically reducing cell proliferation and tumor growth in vivo using a HepG2 xenograft mouse model. These findings indicate that OSMI-1 acts as a potential chemosensitizer by enhancing DOX-induced cell death.

Reference: Cancers (Basel). 2020 Oct 27;12(11):3154. https://pubmed.ncbi.nlm.nih.gov/33121131/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.