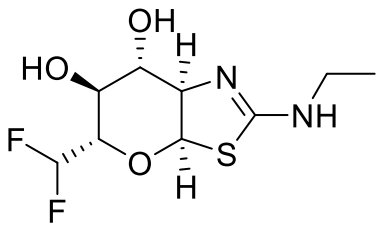
Product data sheet

MedKoo Cat#: 555640 Name: MK-8719 CAS: 1382799-40-7 Chemical Formula: $C_9H_{14}F_2N_2O_3S$ Exact Mass: 268.0693 Molecular Weight: 268.2788	
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:
MK-8719 is a highly potent and selective OGA inhibitor (EC_{50} = 52.7 nM) which is a Potential Treatment for Tauopathies. MK-8719 showed excellent CNS penetration that has been advanced to first-in-human phase I clinical trials.

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
DMSO	63.5	236.69
Ethanol	54.0	201.28
Water	10.34	38.52

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.73 mL	18.64 mL	37.27 mL
5 mM	0.75 mL	3.73 mL	7.45 mL
10 mM	0.37 mL	1.86 mL	3.73 mL
50 mM	0.08 mL	0.37 mL	0.75 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

Wang X, Li W, Marcus J, Pearson M, Song L, Smith K, Terracina G, Lee J, Hong KK, Lu SX, Hyde L, Chen SC, Kinsley D, Melchor JP, Rubins DJ, Meng X, Hostetler E, Sur C, Zhang L, Schachter JB, Hess JF, Selnick HG, Vocadlo DJ, McEachern EJ, Uslaner JM, Duffy JL, Smith SM. MK-8719, a Novel and Selective O-GlcNAcase Inhibitor That Reduces the Formation of Pathological Tau and Ameliorates Neurodegeneration in a Mouse Model of Tauopathy. J Pharmacol Exp Ther. 2020 Aug;374(2):252-263. doi: 10.1124/jpet.120.266122. Epub 2020 Jun 3. PMID: 32493725.

In vivo study

Wang X, Li W, Marcus J, Pearson M, Song L, Smith K, Terracina G, Lee J, Hong KK, Lu SX, Hyde L, Chen SC, Kinsley D, Melchor JP, Rubins DJ, Meng X, Hostetler E, Sur C, Zhang L, Schachter JB, Hess JF, Selnick HG, Vocadlo DJ, McEachern EJ, Uslaner JM, Duffy JL, Smith SM. MK-8719, a Novel and Selective O-GlcNAcase Inhibitor That Reduces the Formation of Pathological Tau and Ameliorates Neurodegeneration in a Mouse Model of Tauopathy. J Pharmacol Exp Ther. 2020 Aug;374(2):252-263. doi: 10.1124/jpet.120.266122. Epub 2020 Jun 3. PMID: 32493725.

7. Bioactivity
Biological target:

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MK-8719 is a highly potent and selective O-GlcNAcase (OGA) inhibitor (K_i=7.9 nM for hOGA).

In vitro activity

In vitro, MK-8719 is a potent inhibitor of the human OGA enzyme with comparable activity against the corresponding enzymes from mouse, rat, and dog.

Reference: J Pharmacol Exp Ther. 2020 Aug;374(2):252-263. https://pubmed.ncbi.nlm.nih.gov/32493725/

In vivo activity

In vivo, oral administration of MK-8719 elevates brain and peripheral blood mononuclear cell O-GlcNAc levels in a dose-dependent manner. In addition, positron emission tomography imaging studies demonstrate robust target engagement of MK-8719 in the brains of rats and rTg4510 mice. In the rTg4510 mouse model of human tauopathy, MK-8719 significantly increases brain O-GlcNAc levels and reduces pathologic tau.

Reference: J Pharmacol Exp Ther. 2020 Aug;374(2):252-263. https://pubmed.ncbi.nlm.nih.gov/32493725/