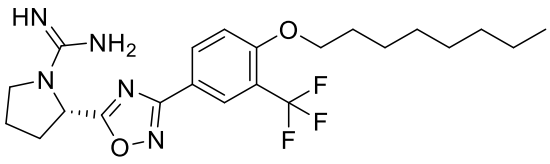
Product data sheet

MedKoo Cat#: 412713 Name: SLM6031434 free base CAS#: 1897379-33-7 (free base) Chemical Formula: $C_{22}H_{30}F_3N_5O_2$ Exact Mass: 453.2352 Molecular Weight: 453.51	
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:
SLM6031434 is an inhibitor of sphingosine kinase type 2 (SphK2). It consists of pedant 1-guanidino-2-phenyloxadiazolylpyrrolidine group.

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
To be determined	To be determined	To be determined

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.21 mL	11.03 mL	22.05 mL
5 mM	0.44 mL	2.21 mL	4.41 mL
10 mM	0.22 mL	1.10 mL	2.21 mL
50 mM	0.04 mL	0.22 mL	0.44 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. Standoli S, Rapino C, Di Meo C, Rudowski A, Kämpfer-Kolb N, Volk LM, Thomas D, Trautmann S, Schreiber Y, Meyer Zu Heringdorf D, Maccarrone M. Sphingosine Kinases at the Intersection of Pro-Inflammatory LPS and Anti-Inflammatory Endocannabinoid Signaling in BV2 Mouse Microglia Cells. Int J Mol Sci. 2023 May 9;24(10):8508. doi: 10.3390/ijms24108508. PMID: 37239854; PMCID: PMC10217805.

In vivo study

1. Schwalm S, Beyer S, Hafizi R, Trautmann S, Geisslinger G, Adams DR, Pyne S, Pyne N, Schaefer L, Huwiler A, Pfeilschifter J. Validation of highly selective sphingosine kinase 2 inhibitors SLM6031434 and HWG-35D as effective anti-fibrotic treatment options in a mouse model of tubulointerstitial fibrosis. Cell Signal. 2021 Mar;79:109881. doi: 10.1016/j.cellsig.2020.109881. Epub 2020 Dec 8. PMID: 33301900.

7. Bioactivity
Biological target

SLM6031434 is a SPHK2 inhibitor (Ki = 0.4 μM for the recombinant mouse enzyme). It is selective for SPHK2 over SPHK1 (Kis = >20 μM). It decreases S1P and increases sphingosine levels in U937 monocytic leukemia cells in a concentration-dependent manner. SLM6031434 reduces blood S1P levels in Sphk1-/-, but not Sphk2-/-, mice. SLM6031434 also increases blood S1P levels in wild-type mice and rats.

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In vitro activity

This study found that SphK2 plays a pro-inflammatory role in microglia, and inhibiting it with SLM6031434 contributed to suppressing inflammatory responses. Inhibiting SphK2 with SLM6031434 significantly reduced the lipopolysaccharide (LPS)-induced production of pro-inflammatory cytokines such as tumor necrosis factor-α (TNFα) and interleukin-1β (IL-1β) in BV2 mouse microglia cells.

Reference: Int J Mol Sci. 2023 May 9;24(10):8508. https://pubmed.ncbi.nlm.nih.gov/37239854/

In vivo activity

This study suggests that SK2 inhibition has anti-fibrotic effects, making it a promising target for treating fibrosis in chronic kidney disease. In a mouse model of progressive kidney damage, results showed that mice treated with SLM6031434 and HWG-35D exhibited reduced fibrotic responses compared to those treated with a vehicle control. In SLM6031434 and HWG-35D treated mice, there was decreased collagen accumulation and lower expression of key fibrosis-related proteins.

Reference: Cell Signal. 2021 Mar;79:109881. https://pubmed.ncbi.nlm.nih.gov/33301900/