

Product data sheet



MedKoo Cat#: 562955 Name: SAMT-247 CAS#: 850715-59-2 Chemical Formula: C ₁₂ H ₁₄ N ₂ O ₃ S Exact Mass: 266.0725 Molecular Weight: 266.32	
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:

SAMT-247 is an inhibitor of HIV. It acts by modifying the nucleocapsid NCp7 region of Gag in infected cells and blocking Gag processing and reducing infectivity.

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	3.75 mL	18.77 mL	37.55 mL
5 mM	0.75 mL	3.75 mL	7.51 mL
10 mM	0.38 mL	1.88 mL	3.75 mL
50 mM	0.08 mL	0.38 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

1. Miller Jenkins LM, Paine EL, Deshmukh L, Nikolayevskiy H, Lyons GC, Scerba MT, George Rosenker K, Luecke HF, Louis JM, Chertova E, Gorelick RJ, Ott DE, Clore GM, Appella DH. Inhibition of HIV Maturation via Selective Unfolding and Cross-Linking of Gag Polypeptide by a Mercaptobenzamide Acetylase. *J Am Chem Soc.* 2019 May 22;141(20):8327-8338. doi: 10.1021/jacs.9b02743. Epub 2019 May 13. PMID: 31042030; PMCID: PMC8496520.
2. Nikolayevskiy H, Scerba MT, Deschamps JR, Appella DH. Reaction Kinetics Direct a Rational Synthesis of an HIV-1 Inactivator of Nucleocapsid Protein 7 and Provide Mechanistic Insight into Cellular Metabolism and Antiviral Activity. *Chemistry.* 2018 Jul 5;24(38):9485-9489. doi: 10.1002/chem.201801253. Epub 2018 May 25. PMID: 29653024.

In vivo study

1. Rahman MA, Bissa M, Silva de Castro I, Helmold Hait S, Stamos JD, Bhuyan F, Hunegnaw R, Sarkis S, Gutowska A, Doster MN, Moles R, Hoang T, Miller Jenkins LM, Appella E, Venzon DJ, Choo-Wosoba H, Cardozo T, Baum MM, Appella DH, Robert-Guroff M, Franchini G. Vaccine plus microbicide effective in preventing vaginal SIV transmission in macaques. *Nat Microbiol.* 2023 May;8(5):905-918. doi: 10.1038/s41564-023-01353-7. Epub 2023 Apr 6. Erratum in: *Nat Microbiol.* 2023 Aug;8(8):1600. PMID: 37024617; PMCID: PMC10159859.
2. Helmold Hait S, Hogge CJ, Rahman MA, Ko EJ, Hunegnaw R, Mushtaq Z, Enyindah-Asonye G, Hoang T, Miller Jenkins LM, Appella E, Appella DH, Robert-Guroff M. An SAMT-247 Microbicide Provides Potent Protection against Intravaginal Simian Immunodeficiency Virus Infection of Rhesus Macaques, whereas an Added Vaccine Component Elicits Mixed Outcomes. *J*

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Immunol. 2020 Jun 15;204(12):3315-3328. doi: 10.4049/jimmunol.2000165. Epub 2020 May 11. PMID: 32393514; PMCID: PMC7392472.

7. Bioactivity

Biological target:

SAMT-247 is a microbicide that selectively inactivates NCp7, causing zinc ejection and preventing RNA encapsidation.

In vitro activity

This paper characterized the unique mechanism by which SAMT-247 interfered with HIV maturation via a series of selective acetylations at highly conserved cysteine and lysine residues in Gag and Gag-Pol polyproteins.

Reference: J Am Chem Soc. 2019 May 22;141(20):8327-8338. <https://pubmed.ncbi.nlm.nih.gov/31042030/>

In vivo activity

SAMT-247 boosts natural killer cytotoxicity, monocyte efferocytosis, and reduces T-cell activation, strengthening vaccine protection. The combination of a modified SIV envelope immunogen vaccine and SAMT-247 reduces the risk of SIVmac251 acquisition by over 90%. 80% of macaques treated with SAMT-247 and the vaccine remained uninfected, compared to 40% with the vaccine alone, showing the combination's superior effectiveness.

Reference: Nat Microbiol. 2023 May;8(5):905-918. <https://pubmed.ncbi.nlm.nih.gov/37024617/>

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.