

Product data sheet



MedKoo Cat#: 561333 Name: SM-324405 CAS#: 677773-91-0 Chemical Formula: C ₁₉ H ₂₃ N ₅ O ₄ Exact Mass: 385.1750 Molecular Weight: 385.42	
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:

SM-324405 is a selective toll-like receptor 7 (TLR7) agonist antedrug. SM-324405 is used for immunoresearch of allergic diseases.

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	38.54	100

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.59 mL	12.97 mL	25.95 mL
5 mM	0.52 mL	2.59 mL	5.19 mL
10 mM	0.26 mL	1.3 mL	2.59 mL
50 mM	0.05 mL	0.26 mL	0.52 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

To be determined

In vivo study

- Biffen M, Matsui H, Edwards S, Leishman AJ, Eiho K, Holness E, Satterthwaite G, Doyle I, Wada H, Fraser NJ, Hawkins SL, Aoki M, Tomizawa H, Benjamin AD, Takaku H, McNally T, Murray CM. Biological characterization of a novel class of toll-like receptor 7 agonists designed to have reduced systemic activity. *Br J Pharmacol.* 2012 May;166(2):573-86. doi: 10.1111/j.1476-5381.2011.01790.x. PMID: 22122192; PMCID: PMC3417490.
- Kurimoto A, Hashimoto K, Nakamura T, Norimura K, Ogita H, Takaku H, Bonnert R, McNally T, Wada H, Isobe Y. Synthesis and biological evaluation of 8-oxoadenine derivatives as toll-like receptor 7 agonists introducing the antedrug concept. *J Med Chem.* 2010 Apr 8;53(7):2964-72. doi: 10.1021/jm100070n. PMID: 20232824.

7. Bioactivity

Biological target:

SM-324405 is a TLR7 agonist (EC₅₀ = 50.1 nM). It is selective for TLR7 over TLR8 (EC₅₀ = >10 μM). SM-324405 induces proliferation of isolated mouse, rat, and dog splenocytes (EC₅₀s = 3.98, 6.31, and 12.59 nM, respectively).

In vitro activity

To be determined

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In vivo activity

SM-324405 is a novel candidate for immunotherapy of allergic diseases. SM-324405 was a potent TLR7 agonist (EC₅₀ 50 nM) and rapidly metabolized by human plasma (T_{1/2} 2.6 min) to the much less active carboxylic acid 16. Intratracheal administration of SM-324405 effectively inhibited allergen-induced airway inflammation without inducing cytokines systemically.

Reference: J Med Chem. 2010 Apr 8;53(7):2964-72. <https://pubmed.ncbi.nlm.nih.gov/20232824/>

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.