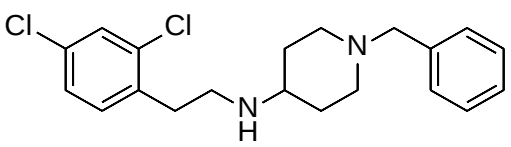
Product data sheet

MedKoo Cat#: 555899 Name: M22 NEDD8 inhibitor CAS: 864420-54-2 Chemical Formula: $C_{20}H_{24}Cl_2N_2$ Exact Mass: 362.1317 Molecular Weight: 363.326	
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:
M22 NEDD8 inhibitor is a novel, potent, selective reversible NEDD8 activating enzyme (NAE) inhibitor. M22 is reversible for NAE, inhibits multiple cancer cell lines with GI50 values in the low micromolar range, and induces apoptosis in A549 cells. Furthermore, it produces tumor inhibition in AGS xenografts in nude mice and low acute toxicity in a zebrafish model. M22, a novel NAE inhibitor, represents a promising lead structure for the development of new antitumor agents.

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	161.5	444.50
Ethanol	73.0	200.92
Water	4.0	11.01

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.75 mL	13.76 mL	27.52 mL
5 mM	0.55 mL	2.75 mL	5.50 mL
10 mM	0.28 mL	1.38 mL	2.75 mL
50 mM	0.06 mL	0.28 mL	0.55 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. Umetsu A, Sato T, Watanabe M, Ida Y, Furuhashi M, Tsugeno Y, Ohguro H. Unexpected Crosslinking Effects of a Human Thyroid Stimulating Monoclonal Autoantibody, M22, with IGF1 on Adipogenesis in 3T3L-1 Cells. Int J Mol Sci. 2023 Jan 6;24(2):1110. doi: 10.3390/ijms24021110. PMID: 36674625; PMCID: PMC9863235.
2. Tanaka Y, Morita N, Kitagawa Y, Gotoh B, Komatsu T. Human metapneumovirus M2-2 protein inhibits RIG-I signaling by preventing TRIM25-mediated RIG-I ubiquitination. Front Immunol. 2022 Aug 15;13:970750. doi: 10.3389/fimmu.2022.970750. PMID: 36045682; PMCID: PMC9421128.

In vivo study

1. Lu P, Liu X, Yuan X, He M, Wang Y, Zhang Q, Ouyang PK. Discovery of a novel NEDD8 Activating Enzyme Inhibitor with Piperidin-4-amine Scaffold by Structure-Based Virtual Screening. ACS Chem Biol. 2016 Jul 15;11(7):1901-7. doi: 10.1021/acschembio.6b00159. Epub 2016 May 6. PMID: 27135934.

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2. Furmaniak J, Sanders J, Young S, Kabelis K, Sanders P, Evans M, Clark J, Wilmot J, Rees Smith B. In vivo effects of a human thyroid-stimulating monoclonal autoantibody (M22) and a human thyroid-blocking autoantibody (K1-70). Auto Immun Highlights. 2011 Sep 14;3(1):19-25. doi: 10.1007/s13317-011-0025-9. PMID: 26000124; PMCID: PMC4389019.

7. Bioactivity

Biological target:

M22 NEDD8 inhibitor is a novel, potent, selective reversible NEDD8 activating enzyme (NAE) inhibitor.

In vitro activity

HMPV M2-2 was the most potent inhibitor of RIG-I/TRIM25-mediated interferon (IFN)-β activation. M2-2 silencing induced the activation of transcription factors (IRF and NF-kB) downstream of RIG-I signaling in A549 cells. Moreover, M2-2 inhibited RIG-I ubiquitination and CARD-dependent interactions with MAVS.

Reference: Front Immunol. 2022 Aug 15;13:970750. https://pubmed.ncbi.nlm.nih.gov/36045682/

In vivo activity

M22 is reversible for NAE, inhibits multiple cancer cell lines with GI50 values in the low micromolar range, and induces apoptosis in A549 cells. Furthermore, it produces tumor inhibition in AGS xenografts in nude mice and low acute toxicity in a zebrafish model. M22, a novel NAE inhibitor, represents a promising lead structure for the development of new antitumor agents.

Reference: ACS Chem Biol. 2016 Jul 15;11(7):1901-7. https://pubmed.ncbi.nlm.nih.gov/27135934/

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.