

# Product data sheet



MedKoo Cat#: 561189 Name: Nanchangmycin CAS: 65101-87-3 Chemical Formula: C <sub>47</sub> H <sub>77</sub> NaO <sub>14</sub> Molecular Weight: 889.1088	
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:

Nanchangmycin is a polyether antibiotic that acts against a broad spectrum of harmful nematodes and insects.

## 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
DMF	30.0	33.74
DMSO	75.0	84.35
Ethanol	62.5	70.30

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.12 mL	5.62 mL	11.25 mL
5 mM	0.22 mL	1.12 mL	2.25 mL
10 mM	0.11 mL	0.56 mL	1.12 mL
50 mM	0.02 mL	0.11 mL	0.22 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. Li W, Chen JY, Sun C, Sparks RP, Pantano L, Rahman RU, Moran SP, Pondick JV, Kirchner R, Wrobel D, Bieler M, Sauer A, Ho Sui SJ, Doerner JF, Rippmann JF, Mullen AC. Nanchangmycin regulates FYN, PTK2, and MAPK1/3 to control the fibrotic activity of human hepatic stellate cells. *Elife*. 2022 May 26;11:e74513. doi: 10.7554/eLife.74513. PMID: 35617485; PMCID: PMC9135407.

2. Rausch K, Hackett BA, Weinbren NL, Reeder SM, Sadovsky Y, Hunter CA, Schultz DC, Coyne CB, Cherry S. Screening Bioactives Reveals Nanchangmycin as a Broad Spectrum Antiviral Active against Zika Virus. *Cell Rep*. 2017 Jan 17;18(3):804-815. doi: 10.1016/j.celrep.2016.12.068. PMID: 28099856; PMCID: PMC5270376.

### In vivo study

1. Xu Y, Sun T, Zeng K, Xu M, Chen J, Xu X, Zhang Z, Cao B, Tang X, Wu D, Kong Y, Zeng Y, Mao X. Anti-bacterial and anti-viral nanchangmycin displays anti-myeloma activity by targeting Otub1 and c-Maf. *Cell Death Dis*. 2020 Sep 30;11(9):818. doi: 10.1038/s41419-020-03017-4. PMID: 32999280; PMCID: PMC7527563.

2. Huang M, Liu B, Liu R, Li J, Chen J, Jiang F, Ding H, Deng Z, Liu T. Aglycone Polyether Nanchangmycin and Its Homologues Exhibit Apoptotic and Antiproliferative Activities against Cancer Stem Cells. *ACS Pharmacol Transl Sci*. 2018 Oct 12;1(2):84-95. doi: 10.1021/acspsci.8b00007. PMID: 32219205; PMCID: PMC7088892.

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## 7. Bioactivity

### Biological target:

Nanchangmycin, a polyether antibiotic produced by *Streptomyces nanchangensis* NS3226, inhibits gram-positive bacteria.

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### In vitro activity

Importantly, this study identified nanchangmycin as a potent inhibitor of Zika virus entry across all cell types tested, including physiologically relevant primary cells. Nanchangmycin also was active against other medically relevant viruses, including West Nile, dengue, and chikungunya viruses that use a similar route of entry.

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Reference: Cell Rep. 2017 Jan 17;18(3):804-815. <https://pubmed.ncbi.nlm.nih.gov/28099856/>

### In vivo activity

As showed in Fig. 7a, tumors grew rapidly in the vehicle group, but the growth was strikingly suppressed by Nam and it was almost completely inhibited by Nam at the dosage of 4 mg/kg (Fig. 7a), in contrast, Nam had no effects on mice growth in terms of body weight (Fig. 7b) or biochemical assays including aspartate aminotransferase (AST), or alanine aminotransferase (ALT), alkaline phosphatase (ALP), urea, total bilirubin and total proteins (Fig. 7c), further demonstrating Nam was safe at least at the dosages examined.

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Reference: Cell Death Dis. 2020 Sep 30;11(9):818. <https://pubmed.ncbi.nlm.nih.gov/32999280/>

*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.*