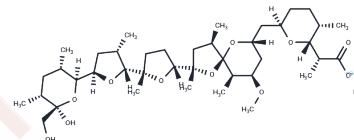


## Nigericin sodium salt

## Chemical Properties

CAS No. :	28643-80-3
Formula:	C40H67NaO11
Molecular Weight:	746.94
Storage:	Keep away from moisture Powder: -20°C for 3 years   In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



## Biological Description

Description	Nigericin sodium salt is an antibiotic, an NLRP3 activator, and a cationic ion carrier. Nigericin sodium triggers the activation of the NALP3 inflammasome, which inhibits Golgi function and suppresses the growth of Gram-positive bacteria.
Targets(IC50)	NOD-like Receptor (NLR),Antibacterial,Antibiotic,NOD,Pyroptosis,Potassium Channel, Wnt/beta-catenin
In vitro	<p><b>METHODS:</b> Triple-negative breast cancer cells MDA-MB-231 and 4T1 were treated with Nigericin sodium (0.25-20 µg/mL) for 24 h. The cell viability of the cells was detected by the MTS.</p> <p><b>RESULTS:</b> Nigericin sodium dose-dependently inhibited the cell viability of MDA-MB-231 and 4T1 cells with IC50 of 2.881 µM and 2.505 µM, respectively. [1]</p> <p><b>METHODS:</b> Human lung cancer cells H460 were treated with Nigericin sodium (1 µM) for 24-48 h. Cell migration and invasion were detected by Transwell.</p> <p><b>RESULTS:</b> Nigericin sodium significantly inhibited the migration and invasion of H460 cells. [2]</p>
In vivo	<p><b>METHODS:</b> To detect anti-tumor activity in vivo, Nigericin sodium (2 mg/kg, subcutaneous injection every two days) and anti-PD-1 (250 µg/mouse, intraperitoneal injection once a week) were administered to BALB/c mice bearing triple-negative mammary adenocarcinoma tumor 4T1 for two weeks.</p> <p><b>RESULTS:</b> PD-1 antibody alone did not show significant antitumor effects, while Nigericin sodium showed moderate antitumor effects.The combination of Nigericin sodium and anti-PD-1 almost completely inhibited tumor growth. [1]</p> <p><b>METHODS:</b> To investigate the effects of aging on inflammatory vesicle function, Nigericin sodium (0.005 mg/g, 250 µL) was administered as a single intraperitoneal injection once daily for seven days to influenza virus-infected BALB/c mice.</p> <p><b>RESULTS:</b> Treatment with Nigericin sodium during influenza infection increased IL-1β production, increased capase-1 activity, and reduced morbidity and mortality in aged mice. During influenza virus infection, NLRP3 inflammatory vesicle activity is impaired in aged mice, and Nigericin sodium treatment rescues NLRP3 in aged hosts.[3]</p>

## Solubility Information

## A DRUG SCREENING EXPERT

Solubility	DMSO: < 1 mg/mL (insoluble or slightly soluble) Methanol: 22.72 mg/mL (30.42 mM), Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble) Ethanol: 120 mg/mL (160.66 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
------------	--

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.3388 mL	6.694 mL	13.388 mL
5 mM	0.2678 mL	1.3388 mL	2.6776 mL
10 mM	0.1339 mL	0.6694 mL	1.3388 mL
50 mM	0.0268 mL	0.1339 mL	0.2678 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

- Wu L, et al. Nigericin Boosts Anti-Tumor Immune Response via Inducing Pyroptosis in Triple-Negative Breast Cancer. *Cancers (Basel)*. 2023 Jun 16;15(12):3221.
- Ju X, Zhu Y, Wang Y, et al. A novel cell culture system modeling the SARS-CoV-2 life cycle. *PLoS pathogens*. 2021, 17(3): e1009439.
- Luo R, Hu Y, Wang L, et al. Penthorum chinense Pursh extract ameliorates hepatic steatosis by suppressing pyroptosis via the NLRP3/Caspase-1/GSDMD pathway. *Food Science & Nutrition*. 2024
- Yakisich JS, et al. Nigericin decreases the viability of multidrug-resistant cancer cells and lung tumorspheres and potentiates the effects of cardiac glycosides. *Tumour Biol*. 2017 Mar;39(3):1010428317694310.
- Stout-Delgado HW, et al. Impaired NLRP3 inflammasome function in elderly mice during influenza infection is rescued by treatment with nigericin. *J Immunol*. 2012 Mar 15;188(6):2815-24.
- Li X, Li X, Xiang C, et al. Starvation-induced phosphorylation activates gasdermin A to initiate pyroptosis. *Cell Reports*. 2024, 43(9).
- Song J Q, Shen L J, Wang H J, et al. Discovery of Balasubramide Derivative with Tissue-Specific Anti-Inflammatory Activity Against Acute Lung Injury by Targeting VDAC1. *Advanced Science*. 2024: 2410550.
- Ju X, Zhu Y, Wang Y, et al. A novel cell culture system modeling the SARS-CoV-2 life cycle[J]. *PLoS pathogens*. 2021, 17(3): e1009439.

**Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins**

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel: 781-999-4286 E\_mail: info@targetmol.com Address: 34 Washington Street, Wellesley Hills, MA 02481