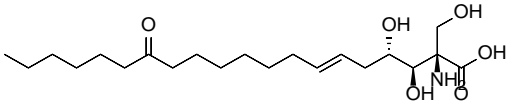


Product data sheet



MedKoo Cat#: 561301 Name: Myriocin CAS: 35891-70-4 Chemical Formula: C ₂₁ H ₃₉ NO ₆ Exact Mass: 401.2777 Molecular Weight: 401.544	
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:

Myriocin, also known as antibiotic ISP-1 and thermozytocidin, is an atypical amino acid and an antibiotic derived from certain thermophilic fungi. Myriocin is a very potent inhibitor of serine palmitoyltransferase, the first step in sphingosine biosynthesis. Due to this property, it is used in biochemical research as a tool for depleting cells of sphingolipids.

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	4.35	10.83
Methanol	2.0	4.98

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.49 mL	12.45 mL	24.90 mL
5 mM	0.50 mL	2.49 mL	4.98 mL
10 mM	0.25 mL	1.25 mL	2.49 mL
50 mM	0.05 mL	0.25 mL	0.50 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. He L, Liu Y, Xu J, Li J, Cheng G, Cai J, Dang J, Yu M, Wang W, Duan W, Liu K. Inhibitory Effects of Myriocin on Non-Enzymatic Glycation of Bovine Serum Albumin. *Molecules*. 2022 Oct 18;27(20):6995. doi: 10.3390/molecules27206995. PMID: 36296589; PMCID: PMC9607541.
2. Amemiya F, Maekawa S, Itakura Y, Kanayama A, Matsui A, Takano S, Yamaguchi T, Itakura J, Kitamura T, Inoue T, Sakamoto M, Yamauchi K, Okada S, Yamashita A, Sakamoto N, Itoh M, Enomoto N. Targeting lipid metabolism in the treatment of hepatitis C virus infection. *J Infect Dis*. 2008 Feb 1;197(3):361-70. doi: 10.1086/525287. PMID: 18248300.

In vivo study

1. Yalcin EB, Tong M, Homans C, de la Monte SM. Myriocin Treatment Reverses Alcohol-Induced Alterations in Polyunsaturated Fatty Acid-Containing Phospholipid Expression in the Liver. *Nutr Metab Insights*. 2022 Feb 28;15:11786388221082012. doi: 10.1177/11786388221082012. PMID: 35250275; PMCID: PMC8891894.
2. He Q, Johnson VJ, Osuchowski MF, Sharma RP. Inhibition of serine palmitoyltransferase by myriocin, a natural mycotoxin, causes induction of c-myc in mouse liver. *Mycopathologia*. 2004 Apr;157(3):339-47. doi: 10.1023/b:myco.0000024182.04140.95. PMID: 15180163.

Product data sheet



7. Bioactivity

Biological target:

Myriocin (Thermozymocidin) is a potent inhibitor of serine-palmitoyl-transferase (SPT). Myriocin suppresses replication of both the subgenomic HCV-1b replicon and the JFH-1 strain of genotype 2a infectious HCV, with an IC₅₀ of 3.5 µg/mL for inhibiting HCV infection.

In vitro activity

Using the HCV cell culture system, this study investigated the effect of myriocin, a sphingomyelin synthesis inhibitor, on HCV replication. Myriocin suppressed replication of both a genotype 1b subgenomic HCV replicon (Huh7/Rep-Feo) and genotype 2a infectious HCV (JFH-1 HCV) in a dose-dependent manner (for subgenomic HCV-1b, maximum of 79% at 1000 nmol/L; for genomic HCV-2a, maximum of 40% at 1000 nmol/L).

Reference: J Infect Dis. 2008 Feb 1;197(3):361-70. <https://pubmed.ncbi.nlm.nih.gov/18248300/>

In vivo activity

To evaluate the biological effects of myriocin in vivo, we investigated the levels of free sphingoid bases and expression of selected genes regulating cell growth in mouse liver. Male Balb/c mice, weighing 22 g were injected intraperitoneally with myriocin at 0, 0.1, 0.3, and 1.0 mg kg⁻¹ body weight daily for 5 days. Results showed that myriocin blocked de novo synthesis of sphingolipids in vivo by SPT inhibition and induced c-myc expression in liver.

Reference: Mycopathologia. 2004 Apr;157(3):339-47. <https://pubmed.ncbi.nlm.nih.gov/15180163/>

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.