

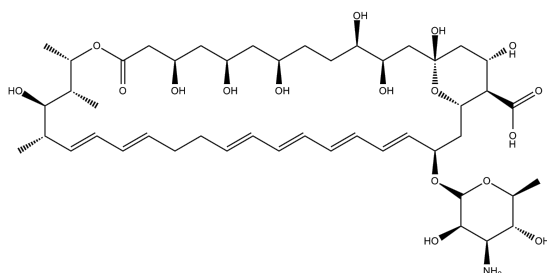
Product Data Sheet

Product Name: Nystatin (Fungicidin)
Cat. No.: GC10090

Chemical Properties

Cas No.	1400-61-9		
化学名	(4E,6E,8E,10E,14E,16E,18S,19R,20R,21S,35S)-3-[(2S,3S,4S,5S,6R)-4-amino-3,5-dihydroxy-6-methyloxan-2-yl]oxy-19,25,27,29,32,33,35,37-octahydroxy-18,20,21-trimethyl-23-oxo-22,39-dioxabicyclo[33.3.1]nonatriaconta-4,6,8,10,14,16-hexaene-38-carboxylic acid		
Canonical SMILES	<chem>CC1C=CC=CCCC=CC=CC=CC=CC(C2C(C(C(C(O2)(CC(C(CCC(C(C(C(C(=O)OC(C(C1O)C)C)O)O)O)O)O)C(=O)O)OC3C(C(C(C(O3)C)O)N)O</chem>		
分子式	C ₄₇ H ₇₅ NO ₁₇	分子量	926.09
溶解度	≥ 30.45 mg/mL in DMSO	储存条件	-20°C, sealed storage, away from moisture and light, unstable in solution, ready to use.
General tips	For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.		

Structure



Protocol

Cell experiment [1]:

Cell lines	Oral Candida species and human buccal epithelial cells
Preparation method	The solubility of this compound in DMSO is > 30.5 mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20 °C for several months.
Reacting condition	1 hr
Applications	The minimal inhibitory concentrations (µg/mL) of Nystatin for <i>C. albicans</i> , <i>C. tropicalis</i> , <i>C. krusei</i> , <i>C. parapsilosis</i> , <i>C. glabrata</i> and <i>C. guilliermondii</i> in RPMI broth were 0.78 ~ 1.56, 1.56 ~ 3.12, 3.12, 1.56 ~ 3.12, 0.78 ~ 1.56 and 0.39 ~ 0.78, respectively. Compared with the control group, Nystatin significantly reduced adhesion of 6 Candida species to buccal epithelial cells. However, the adhesion of <i>C. albicans</i> isolates was least affected by Nystatin treatment, which was significantly different from that of the non- <i>albicans</i> species.

Animal experiment [2]:

Animal models	Aspergillus-infected, neutropenic mice
Dosage form	2, 4, 6 and 8 mg/kg/day; i.v.

Caution: Product has not been fully validated for medical applications. For research use only.

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Product Data Sheet

Applications	At a dose as low as 2 mg/kg/day, Liposomal Nystatin significantly protected neutropenic mice from Aspergillus-induced death compared to either the no-treatment, the saline or the empty-liposome group. Liposomal Nystatin-treated mice showed no evidence of Aspergillus infection either at day 5 in all of the treatment groups or at day 52 in the 8 mg/kg/day liposomal-Nystatin treatment group.
Other notes	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.
References:	[1]. Ellepola AN, Panagoda GJ, Samaranayake LP. Adhesion of oral Candida species to human buccal epithelial cells following brief exposure to nystatin. Oral Microbiol Immunol. 1999 Dec;14(6):358-63. [2]. Wallace TL, Paetznick V, Cossum PA, Lopez-Berestein G, Rex JH, Anaissie E. Activity of liposomal nystatin against disseminated Aspergillus fumigatus infection in neutropenic mice. Antimicrob Agents Chemother. 1997 Oct;41(10):2238-43.

Background

Nystatin (Fungicidin) is a polyene antifungal antibiotic [1].

Antifungal antibiotic is a pharmaceutical fungicide used to treat and prevent mycoses.

Nystatin is a polyene antifungal antibiotic that is effective against yeast and mycoplasma [1]. In liquid media, Nystatin inhibited *C. albicans* at concentrations of 5-20 U/ml[2].

In a 200 clinical isolates, which comprised of 113 *Candida albicans*, 54 *Candida glabrata*, 11 *Candida parapsilosis*, 11 *Candida tropicalis* and 11 *Candida krusei*. Nystatin exhibited MIC90 value of 4 mg/L against *C. albicans* isolates and all non-*albicans* *Candida* species tested. The results confirmed *C. Albicans* was most frequently susceptible and Nystatin could be used to treat vulvovaginal candidiasis caused by non-*albicans* *Candida* species. Nystatin would be an important choice for women affected by non-*albicans* *Candida* species which present higher resistance to the imidazole-based treatments [3].

制霉菌素（Fungicidin）是一种多烯类抗真菌抗生素[1]。

抗真菌抗生素是一种用于治疗 and 预防真菌病的药物真菌剂。

制霉菌素是一种多烯类抗真菌抗生素，对酵母菌和支原体有有效的抗菌作用[1]。在液体培养基中，制霉菌素以5-20 U/ml的浓度抑制了白色念珠菌（*Candida albicans*）[2]。

在200个临床分离株中，包括113个白色念珠菌、54个光滑念珠菌、11个副银白念珠菌、11个热带银白念珠菌和11个克鲁氏念珠菌。制霉菌素对*C. albicans*分离株和所有检测的非白色念珠菌菌株的MIC90值均为4 mg/L。结果证实*C. albicans*最易感，制霉菌素可用于治疗由非白色念珠菌菌株引起的阴道念珠菌病。对于对咪唑类药物具有较高抗药性的女性患者，制霉菌素是一种重要选择[3]。

References:

- [1]. Childs AJ. Effect of Nystatin on Growth of *Candida albicans* During Antibiotic Therapy. Br Med J, 1956, 1(4968): 660-662.
- [2]. Stewart GT. Laboratory and Clinical Studies with Nystatin in Post-antibiotic Mycotic Infections. Br Med J, 1956, 1(4968): 658-660.
- [3]. Choukri F, Benderdouche M, Sednaoui P. In vitro susceptibility profile of 200 recent clinical isolates of *Candida* spp. to topical antifungal treatments of vulvovaginal candidiasis, the imidazoles and nystatin agents. J Mycol Med, 2014, 24(4): 303-307.

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