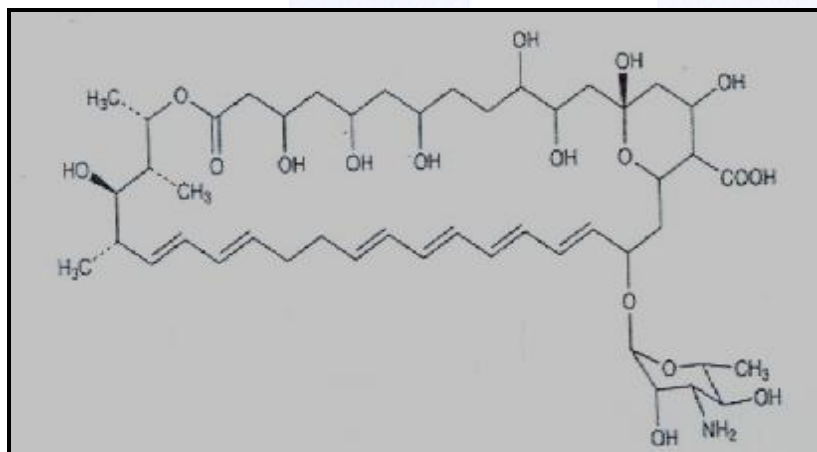


### Product Profile



Product Name:	Nystatin Suspension
Product Catalog Number:	03-030-1
Unit Size Availability:	20ml
Concentration:	10,000 units/ml
Molecular Formula(CRM)	C <sub>47</sub> H <sub>75</sub> NO <sub>17</sub> ·2H <sub>2</sub> O
Molecular Weight: (CRM)	962.14
CAS#: (CRM)	1400-61-9
Formulation:	Brown-Colored Solution
Specified Storage Conditions:	-20°
Stability: (Under Specified Handling & Storage)	Please Refer to Product Label

**Important Note!** Please read the *MSDS* and *Product Profile* carefully in their entirety before using this material for possible safety precautions and potential hazards.

#### **Product Description**

*Nystatin*<sup>1</sup> is a mixture of anti-mycotic polyenes, like Amphotericin B, and is used in cell culture for the control of fungi, yeasts and molds. This polyene macrolide antimycotic, generally termed Nystatins, like many other antifungals and antibiotics are of bacterial origin. Nystatin has been isolated from the soil actinomycete, *Streptomyces noursei*. The Mode of Action (MOA) of this family is exhibited by its ability to bind to steroidal alcohols (e.g. cholesterol, cholestanol), specifically ergosterol, in the cell membrane of susceptible fungi by creating transmembrane channels in the cell membrane *per se* thereby increasing membrane permeability.

The Minimum Inhibitory Concentration (MIC) for Nystatin-sensitive fungi is reportedly in the range of 1.56-6.25 µg/ml.

The resultant loss of cations (e.g. K<sup>+</sup>, Na<sup>+</sup>, H<sup>+</sup>), and/or other low molecular-weight substances including sugars, amino acids or nucleotides, the increase or amplification of Na<sup>+</sup>/K<sup>+</sup> pump activity in addition to the inhibitory effect through these channels in the extracellular space of several membrane-bound enzymes, collectively and in concert, all contribute to the demise of these types of organisms. Nystatin is primarily fungistatic at low concentrations against biphasic fungi, Dermatophyta and molds. It is also effective against yeasts.

These intermolecular hydrogen bonding interactions among the carboxyl, hydroxyl and amino groups stabilize the channel pore causing the cytoplasmic contents to escape. It may be toxic to some insect cell types.

The current role of this anti-mycotic selective ionophore in cell culture is multi-faceted and may be divided into several principal functions.

- Anti-Mycotic Spectrum only, it is not bactericidal or virucidal
- Interacts with the fungal cell membranes by increasing cell-membrane permeability by providing a pathway for H<sup>+</sup> flow
- One hundred percent(100%) pharmacokinetic activity

Some Predominant Characteristics of Nystatin include:

- ◆ Easy-To-Use
- ◆ Liquid Formulation
- ◆ Cation Selective Ionophore
- ◆ Anti-Mycotic Spectrum of Activity(i.e. Fungistatic/Fungicidal)

Storage & Handling Precautions and Disclaimer:

For *in vitro* diagnostic use only.

The product should be stored at -20°C. The product should not be left in the light for prolonged periods as it is light-sensitive. When stored in the dark under ideal conditions, the product is stable until the expiry date. Deterioration of liquid media may be recognized by any of the following characteristics, among others including: (a). color change, (b). presence of clumping/flocculent debris/ granulation/ particulates/ precipitates or sediments (c). Insolubility,(d). And/or decrease in expected performance parameters. Any material described above should not be used and therefore discarded.

Stability:

Nystatin is effective as a solution and/or in aqueous suspension however, it begins to lose activity soon after preparation. Factors such as heat, light and oxygen accelerate the process of decomposition. In tissue culture media, Nystatin is stable for three (3) days at 37°C or in moderately alkaline media. However at a pH of <2 or >7, this anti-mycotic is very labile, and accordingly, readily inactivated.

Instructions/Procedure:

- 1) Take a bottle from the proper storage conditions at -20°C, read the label and thaw to room temperature.
- 2) Make sure that the cap of the bottle is tight.
- 3) Gently swirl the solution in the bottle.
- 4) Wipe the outside of the bottle with a disinfectant solution such as 70% ethanol.
- 5) Using aseptic/sterile technique under a laminar-flow culture hood, work according to established protocols.
- 6) Recommended Dilution:1:100 to 1:1000\*

\* It is recommended to test for the required concentration on a case-by-case basis.

Nystatin is effective as a suspension. Take the amount needed, aliquot and re-freeze @ specified temperature( -20°C).

**Please Note:** It is not recommended to autoclave or sterile-filter Nystatin suspensions.

**Quality Control**

Test	Specification
Osmolality:	270-290 mOsm/kg
pH:	7.0-7.6
Sterility:	Test & Record

**Auxiliary Products**

Product Name	Catalog Number	Storage Temperature
Dulbecco's Phosphate Buffered Saline(DPBS) without Calcium and Magnesium	02-023-1	Room Temperature (15-30°)
Amphotericin B 250 micrograms/ml	03-028-1	-20°C
Amphotericin B 2500 micrograms/ml	03-029-1	-20°C
Penicillin-Streptomycin Nystatin Solution	03-032-1	-20°C
Penicillin-Streptomycin Amphotericin B Solution	03-033-1	-20°C
Nystatin Cell Culture-Tested Biochemicals (γ-Irradiated)	41-506-1/5	-20°C
<b>Note:</b> For a list of other antibiotics, reagents and supplements, please refer to our Product Catalog, Product Profiles, Product Guides or Internet Site.		

**References:**

- 1) Nystatin is the generic name for MYCOSTATIN® which is a registered trade name of E.R. Squibb & Sons.
- 2) Current Edition Merck Index
- 3) Biological Industries (BI) Specifications
- 4) Current Edition USP/E Ph
- 5) Martindale The Extra Pharmacopeia, 28<sup>th</sup> Edition, Royal Pharmaceutical Society: London, England pps.729-730.
- 6) Walsh, Christopher. Antibiotics: Actions, Origins and Resistance, ASM Press: Washington, D.C.,2003.
- 7) Gallagher, Jason C. and MacDougall, Conan. Antibiotics Simplified, Jones & Bartlett Press: Boston, Massachusetts, 2007.