

Nystatin preparation

Product Number **N1638**
Storage Temperature -20 °C

Product Description

Molecular Formula: $C_{47}H_{75}NO_{17} \cdot 2H_2O$
Molecular Weight: 962.1
CAS Number: 1400-61-9
Melting Point: Gradually decomposes above 160 °C without melting by 250 °C¹
 λ_{max} : 290, 307, and 322 nm (ethanol)¹
Specific Rotation (at 25 °C)¹: -10° (glacial acetic acid)
+25° (pyridine)
+12° (DMF)
-7° (0.1 N HCl in methanol)

This product is formulated to contain 10,000 units/ml nystatin in Dulbecco's Phosphate Buffered Saline. It is aseptically processed, sterility tested by USP and cell culture tested (24 ml/L) and is recommended for use in cell culture applications.

Nystatin is a fungistatic and fungicidal polyene antibiotic, which increases the permeability of the cell membrane of sensitive fungi by binding to sterols, chiefly ergosterol.² Its main action is against *Candida* species. It is also effective against *Aspergillus*, *Coccidioides immitis*, *Cryptococcus neoformans*, *Histoplasma capsulatum*, *Blastomyces dermatidis*, and other yeasts and fungi.³ Nystatin has been used to enrich mutants by killing yeast cells.⁶ Nystatin has no antibacterial activity.⁵ The minimum inhibitory concentration for most sensitive fungi has been reported to range from 1.56 to 6.25 µg/ml.

Nystatin is poorly absorbed from the gastrointestinal tract. It is not absorbed through the skin or mucous membranes when applied topically.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Product Information

Preparation Instructions

Nystatin is soluble at 28 °C in the following: methanol (11.2 mg/ml), ethanol (1.2 mg/ml), carbon tetrachloride (1.23 mg/ml), chloroform (0.48 mg/ml), benzene (0.28 mg/ml), and ethylene glycol (8.75mg/ml).¹

Nystatin is soluble in DMSO (5 mg/ml), yielding a clear, bright yellow solution. This product is freely soluble in DMF and formamide.⁴ A 3% suspension in water has a pH of 6.5-8.0.³

It is not recommended to autoclave or sterile filter suspensions of Nystatin.

Storage/Stability

Aqueous suspensions begin to lose activity soon after preparation. Heat, light, and oxygen accelerate decomposition. Aqueous suspensions are stable for 10 minutes when heating to 100 °C at pH 7. Nystatin (in tissue culture media) is stable at 37 °C for three days. It is also stable in moderately alkaline media, but labile at pH 9 and 2. Activity is not diminished by blood or serum.^{1,2}

This product is stored frozen and shipped on dry ice. It has a shelf life of 24 months when stored frozen.

References

1. The Merck Index, 11th ed., Entry# 6658.
2. Brezis, M., et al., Polyene toxicity in renal medulla: injury mediated by transport activity. *Science*, **224**, 66-68 (1984).
3. Martindale The Extra Pharmacopoeia, 29th ed., Reynolds, J. E. F., ed., The Pharmaceutical Press (London, England: 1989), pp. 432-433.
4. Clarke's Isolation & Identification of Drugs, 2nd ed., Moffat, A.C., et al., eds., The Pharmaceutical Press (London, England: 1986), p. 829.
5. Upson's Handbook of Clinical Veterinary Pharmacology, 2nd ed., Udson, D. W., Veterinary Medicine Publishing Co. (Lenexa, KS: 1985), p. 640.
6. Fink, G. R., The Biochemical Genetics of Yeast. *Meth. Enzymol.*, **17-A**, 59-78 (1970).

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