

## Product Information

# Nystatin

Powder, suitable for cell culture, BioReagent

**N6261**

Store at 2-8 °C.

## Product Description

**Molecular Formula:** C<sub>47</sub>H<sub>75</sub>NO<sub>17</sub>

**Molecular Weight:** 926.1

**CAS Number:** 1400-61-9

**Melting Point:** Gradually decomposes above 160 °C without melting by 250 °C

**λ<sub>max</sub>:** 290, 307, and 322 nm (ethanol)

**Specific Rotation (at 25 °C):**

-10° (glacial acetic acid)

+25° (pyridine)

+12° (DMF)

-7° (0.1 N HCl in methanol)

This product is cell culture tested and recommended for use in cell culture applications (50 mg/L). This is a non-sterile powder and is not recommended for aseptic work.

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.<sup>1</sup> 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.<sup>2</sup> Nystatin has been used to enrich mutants by killing yeast cells.<sup>5</sup> Nystatin has no antibacterial activity.<sup>4</sup> 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.

## 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 (8.75 mg/mL).

Nystatin is soluble in DMSO (5 mg/mL), yielding a clear, bright yellow solution. This product is freely soluble in DMF and formamide.<sup>3</sup> A 3% suspension in water has pH 6.5-8.0.<sup>2</sup>

It is not recommended to autoclave or sterile filter solutions of Nystatin. If sterility is required, use γ-irradiated product N4014.

## Storage/Stability

Solutions and 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.<sup>1</sup>

Nystatin, cell culture tested (N1638) is a sterile nystatin suspension in Dulbecco's Phosphate Buffered Saline. This product is stored frozen and shipped on dry ice. When stored frozen it has a shelf life of 24 months.

## References

1. Brezis, M., Rosen, S., Silva, P., Spokes, K., & Epstein, F. H. (1984). Polyene toxicity in renal medulla: injury mediated by transport activity. *Science*, 224(4644), 66-68.
2. Reynolds, J. E. (Ed.). (1989). *Martindale: the extra pharmacopoeia*, pp. 432-433.
3. Moffat, A. C. (1986). Clarke's Isolation and Identification of Drugs in Pharmaceuticals. *Body Fluids and Post-Mortem Material.*, p. 829.
4. Upson, D. W. (1985). *Upson's handbook of clinical veterinary pharmacology* (No. Edition 2, p. 660pp)., p. 640.
5. Hartwell, L. H. (1970). Biochemical genetics of yeast. *Annual review of genetics*, 4(1), 373-396.

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