

Amphotericin B

Amphotericin B (Fungizone[®]), a polyene macrolide, is an antifungal produced by *Streptomyces nodosus*. Congeners of the polyenes consist of four to seven conjugated double bonds linked to a cyclic ester. Amphotericin B, in particular, contains a mycosamine linked to the cyclic ester through a glycosidic bond.

These lipophilic antibiotics actively bind sterols, predominantly ergosterol, a component of the fungal membrane. Binding to ergosterol results in the formation of membrane channels, or pores, and the leakage of ions. Polyenes are fungistatic (inhibiting cell growth) to all fungi with the exception of fungi deficient in ergosterol as a result of its replacement with sterol precursors.

Amphotericin B is insoluble in water at physiological pH. As a result, the bile salt deoxycholate is used as a solubilizing agent.

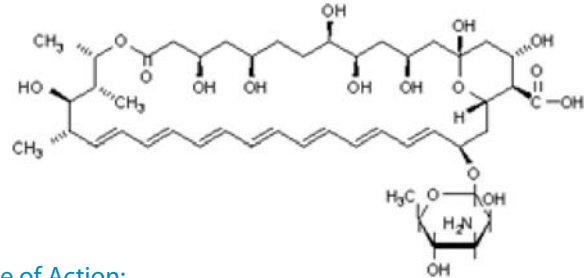
Normal working concentration of amphotericin B is 2.5 µg/mL, and it may be paired with Penicillin/Streptomycin as a broad-spectrum treatment. When used to treat severe contamination of fungi and yeast, it may be necessary to increase the concentration up to 4 µg/mL for several subcultures.

Amphotericin B is stable for up to 7 days in culture at 37°C. At 2-8°C, Amphotericin B is stable for up to 3 weeks. For optimum stability, keep frozen and avoid multiple freeze-thaw cycles.

Molecular Weight and Formula:

924.1, C₄₇H₇₃NO₁₇

Molecular Structure:



Mode of Action:

Binds sterols, particularly ergosterol, forming pores in the fungal cytoplasmic membrane and causing leakage of cellular ions.

Conferred Resistance:

Ergosterol deficiency

Spectrum:

Fungi

Microbiological Potency:

250 µg/mL

Effective Concentration:

2.5 µg/mL, under normal working conditions

Appearance:

Clear solution with slight yellow color

Storage and Stability:

- Frozen (-5 to -20°C)
- Protected from light
- Avoid multiple freeze-thaw cycles

Product Description	Catalog No.	Size
Amphotericin B 250 µg/mL Solution	30-003-CF	6 x 50 mL

References:

1. Champoux, et al. *Sherris Medical Microbiology: An Introduction to Infectious Diseases*. 3rd. ed. Ed. Kenneth J. Ryan. Stamford: Appleton and Lange, 1994.
2. Goodman and Gilman. *The Pharmacological Basis of Therapeutics*. 9th ed. Eds. Joel G. Hardman and Lee E. Limbird. New York: McGraw-Hill Health Professions Division, 1996.
3. Fungizone[®] is a registered trademark of E. R. Squibb and Sons.