

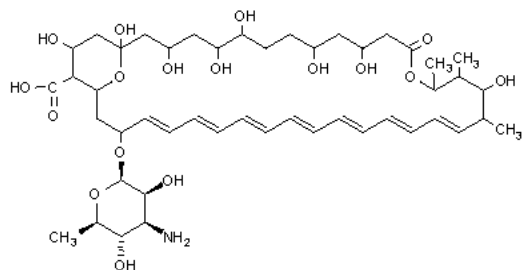
Product Information

Amphotericin B from *Streptomyces* Sp.

Catalog Numbers **A9528**, **A2411**, **A4888**

Storage Temperature 2-8 °C

CAS RN: 1397-89-3

Molecular formula: C₄₇H₇₃NO₁₇

Molecular weight: 924.08

Melting Point: >170 °C with decomposition¹ λ_{max} : 345, 363, 382, 406 nm (methanol)¹pKa: 5.5, 10.0²

Product Description

Amphotericin B is a polyene antifungal antibiotic from *Streptomyces* sp.. It has a high affinity for sterols, primarily ergosterols, of fungal³ and bacterial cell membranes.⁴ After binding to sterols, it forms channels in the membranes, causing small molecules to leak out. Amphotericin B is effective against fungi and yeast. The name of the drug is derived from the amphoteric behavior of the drug, due to the carboxyl group on the main ring and a primary amino group on the mycosamine ring.⁵

Amphotericin B induces K⁺ leakage which is separate from its lethal action, as was demonstrated in human erythrocytes and is due to the inhibitory effect on the Na⁺/K⁺ pump.⁶ At sub-lethal concentrations, this drug stimulates either the activity of some membrane enzymes or cellular metabolism³, in particular stimulation of some cells of the immune system.⁷

Minimum inhibitory concentrations range from 0.03-1 µg/ml for a variety of organisms including strains of *Candida*, *Rhizopus*, *Aspergillus*, and *Coccidioides*. It is inactive against bacteria, rickettsia, and viruses.

Normal usage for maintenance of cell cultures is 2.5 mg/l with penicillin and streptomycin in the medium.⁸ For cultures already contaminated with yeast and fungus, it is recommended to use this product at 2-4 times the normal level (5-10 mg/l), without penicillin and streptomycin for 2-3 subcultures. Once the infection is under control, normal maintenance levels of amphotericin B should be used. SigmaClean[®] water bath treatment (Catalog No. S 5525) is recommended for cleaning the incubator and for adding to the water reservoir to eliminate yeast and fungal contamination.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Amphotericin B is insoluble in water at pH 6 to 7, but soluble in water at pH 2 or 11. It is soluble in dimethylformamide (2-4 mg/ml) and in DMSO (30-40 mg/ml). Aqueous solutions cannot be sterile filtered due to poor solubility.

Storage/Stability

Stable for 3 days in culture at 37 °C. Stock solutions at 2-8 °C are stable for up to 1 month. For long term, storage at -20 °C, protected from air and light, is recommended.¹ Under these conditions the products are stable for 5 years.

A9528 Amphotericin B solubilized cell culture tested, γ -irradiated

This formulation is a colloidal suspension of Amphotericin B, using deoxycholate as the solubilizing agent. The product is approximately 45% Amphotericin B, 35% sodium deoxycholate; the balance being sodium phosphate and sodium chloride.

Preparation instructions

If reconstituted at 25 mg/10 ml of sterile water, there is no need to filter sterilize. This will yield a slightly hazy yellow solution.

A2411 Amphotericin B, cell culture tested
A4888 Amphotericin B

Both products contain at least 80% amphotericin B and up to 5% amphotericin A by HPLC.

Preparation instructions

Soluble in DMSO (30-40 mg/ml), yielding a hazy solution. For cell culture use, stock solutions in DMSO are prepared at 2.5 mg/ml and filter-sterilized. Then 1 ml of this solution is added to 1 liter of cell culture medium.

References

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