


Specification



Amphotericin B *BioChemica*

A1907

origin	from <i>Streptomyces ssp.</i>
Formula	C ₄₇ H ₇₃ NO ₁₇
M	924.10 g/mol
CAS-No.:	1397-89-3
HS-No.:	29419000
EC-No.:	215-742-2
Storage:	2-8°C protected from light
R:	22-37/38-41
S:	22-26-36
	harmful
WGK:	3
Specification	
Activity	min. 750 I.U./mg
Solubility	clear, orange (10 %, DMF/1 M HCl 3 : 1)
Sulfated ash	max. 3 %
UV spectrum	complies
Amphotericin A	max. 15 %
Water	max. 5 %
Literature	
<p>(1) Holz, R.W. (1979) <i>Antibiotics V</i>, p. 313 (F.E.Hahn ed.) Springer-Verlag Berlin, Heidelberg, New York. Polyene antibiotics: Nystatin, Amphotericin B and Filipin.</p> <p>(2) Medoff, G. <i>et al.</i> (1983) <i>Ann. Rev. Pharmacol. Toxicol.</i> 23, 303-330 Antifungal agents useful in therapy of systemic fungal infections.</p> <p>(3) Charak, B.S. <i>et al.</i> (1994) <i>Br. J. Haematol.</i> 88, 693-698 Protecting effect of G-CSF against Amphotericin B-induced Myelosuppression <i>in vitro</i>.</p>	

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Comment

The antibiotic amphotericin B was isolated from *Streptomyces nodosus*. It belongs to the macrocyclic lactones and its action is fungistatic. Amphotericin B binds to sterols (e. g. cholesterol, cholestanol) with planar structure and disturbs the membrane permeability. Ions, like K^+ , Na^+ and H^+ or other low molecular weight substances (e. g. amino acids, sugars, nucleotides) may cross the membrane (1). The cytotoxic concentration is approx. 30 $\mu\text{g/ml}$ and the recommended working concentration at 2.5 $\mu\text{g/ml}$.

Stability: Amphotericin B is of low solubility in water at pH values from 6 - 7. At the pH 2 and 11, respectively, only 100 $\mu\text{g/ml}$ can be dissolved. In DMSO, it is soluble at concentrations of 30 - 40 mg/ml, in propylene glycol 2 - 5 mg/ml, in acidified dimethyl formamide and acidic or alkaline methanol 60 - 80 mg/ml and 2 - 5 mg/ml, respectively. Store the dry substance protected from light and under argon. Under these conditions, the antibiotic is stable for more than 6 months. Aqueous solutions with a pH value of 5 - 7 are stable for 40 - 90 days, if stored at +4°C. Perform longer experiments protected from light, where possible, even if exposure to light for up to 8 hours has no negative influence. Amphotericin B is heat labile, but at 37°C it is stable for 3 days, nevertheless.