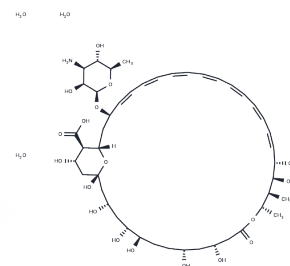


Amphotericin B trihydrate

Chemical Properties

CAS No. : 1202017-46-6
 Formula: C₄₇H₇₉NO₂₀
 Molecular Weight: 978.136
 Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
 Actual storage temperature shall be subject to the COA.



Biological Description

Description	Amphotericin B trihydrate, a polyene antibiotic derived from <i>Streptomyces nodosus</i> fermenter cultures, exhibits antileishmanial properties.
Targets(IC50)	Others, Antibacterial, Antibiotic, Parasite, Antifungal
In vitro	Amphotericin B, a chemical compound, interacts with cholesterol—primarily found in mammal cell membranes—thus its application is limited due to notable toxicity. In its operational state, Amphotericin B may exist either as a pre-micellar form or in highly aggregated clusters in the subphase. Its antimicrobial mechanism is specific to unicellular <i>Leishmania promastigotes</i> (LPs), where it functions by creating aqueous pores in cell membranes that allow the passage of small cations and anions, leading to cell death. At a concentration of 0.1 mM, Amphotericin B triggers a change in polarization potential indicative of potassium (K ⁺) leakage from KCl-loaded liposomes, a model for cell membranes, in an iso-osmotic sucrose solution. Furthermore, at 0.05 mM, it causes a substantial reduction in the cell's negative membrane potential, suggesting sodium (Na ⁺) influx, a critical factor in cell viability.
In vivo	Amphotericin B extends incubation times and diminishes PrPSc accumulation in the hamster scrapie model, while significantly lowering PrPSc levels in mice affected by transmissible subacute spongiform encephalopathies (TSSE)[4]. Additionally, this compound directly targets <i>Plasmodium falciparum</i> , affecting eryptosis in infected erythrocytes, parasitemia, and survival in murine malaria. It also delays the escalation of parasitemia and notably prolongs the survivability of <i>Plasmodium berghei</i> -infected mice[5].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.0223 mL	5.1117 mL	10.2235 mL
5 mM	0.2045 mL	1.0223 mL	2.0447 mL
10 mM	0.1022 mL	0.5112 mL	1.0223 mL
50 mM	0.0204 mL	0.1022 mL	0.2045 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

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Andreza Rochelle do Vale Morais, et al. In-vitro and in-vivo antileishmanial activity of inexpensive Amphotericin B formulations: Heated Amphotericin B and Amphotericin B-loaded microemulsion. Exp Parasitol. 2018 Sep;192:85-92.

Ramos H, et al. Amphotericin B kills unicellular leishmanias by forming aqueous pores permeable to small cations and anions. J Membr Biol. 1996 Jul;152(1):65-75.

Demaimay R, et al. Pharmacological studies of a new derivative of amphotericin B, MS-8209, in mouse and hamster scrapie. J Gen Virol. 1994 Sep;75 (Pt 9):2499-503.

Adams ML, et al. Amphotericin B encapsulated in micelles based on poly(ethylene oxide)-block-poly(L-amino acid) derivatives exerts reduced in vitro hemolysis but maintains potent in vivo antifungal activity.

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