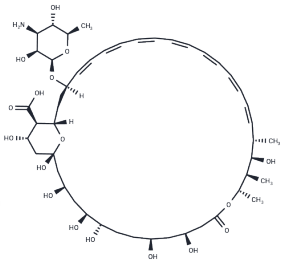
Data Sheet (Cat.No.T1067)

TargetMol

Amphotericin B

Chemical Properties



CAS No. : 1397-89-3

Formula: C47H73NO17

Molecular Weight: 924.08

Appearance: no data available

Storage: store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Amphotericin B (NSC-527017) is a polyene antifungal agent with broad-spectrum activity against many fungal species. Amphotericin B irreversibly binds to ergosterol and disrupts the integrity of cell membranes, resulting in antifungal activity.
Targets(IC50)	Antibiotic,Antifungal
In vitro	**METHODS**: Human normal colon epithelial cells CCD 841 CoTr and human colorectal cancer cells HT-29 were treated with Amphotericin B (0.05-25 μg/mL) for 24 h. Cell viability was measured by Neutral Red method. **RESULTS**: Higher concentrations of Amphotericin B were toxic to CCD 841 CoTr and HT-29 cells, with IC50 values of 8.7 μg/mL and 21.2 μg/mL, respectively. [1] **METHODS**: Candida albicans were treated with Amphotericin B (100 μM) for 4-16 min and imaged using the FLIM technique. **RESULTS**: Amphotericin B preferentially binds to the cell wall and does not efficiently cross the barrier covering the cell membrane.Amphotericin B can more readily pass through the cell wall barrier of young cells during the emergence stage. [2]
In vivo	**METHODS**: To assay antifungal activity in vivo, Amphotericin B (0.25-4 mg/kg) was administered as a single intraperitoneal injection to C. albicans K-1-infected ICR/Swiss mice. **RESULTS**: Only the highest single dose of Amphotericin B treatment significantly reduced the number of colonies compared to the number of colonies at the start of treatment. [3]
Kinase Assay	THP-1 and HEK293 cells are transiently transfected using DEAE-dextran and Polyfect reagent, respectively. Plasmids transfected contain genes coding for the NF-κB-dependent pELAM-luc luciferase reporter, TLR2, TLR4, CD14, and MD2. Cells (5×105 THP-1 or 1×105 HEK293) are added to 12-well plates, washed after 18 h, and stimulated for 5 h. Cells are then lysed with reporter lysis buffer as directed, and lysates are analyzed for luminescence using Promega luciferase substrate and a Monolight 3010 luminometer.
Cell Research	Amphotericin B is dissolved in DMSO. The kinetics of cell death induced by AmB against Leishmania promastigotes is followed by using fluorometry with the DNA-binding compound ethidium bromide (EB). Fluorescence measurements are performed on a SPEX Fluorolog II spectrophotometer at 365-580 nm excitation-emission wavelengths. Promastigotes at a final concentration of 25×106 cells/mL are incubated for 5 min with gentle stirring in the fluorescence cuvette with 2 mL of different buffered solutions but always containing 10 mM glucose and EB (50 mM). After signal stabilization is achieved,

AmB is added and dissolved in dimethylsulfoxide. Maximal EB incorporation is always obtained by adding digitonin (50 mg/mL). All solutions used are buffered with 75 mM TRIS (pH 4 7.6) and contain 150 mM NaCl (BNa+), 150 mM KCl (BK+), 150 mM choline chloride, and 100 mM sucrose, 100 mM NaCl. The osmolarity of all solutions is always adjusted to 390±5 mOsm using an advanced instrument SW2 osmometer.

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (5.41 mM),Suspension. DMSO: 50 mg/mL (54.11 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.0822 mL	5.4108 mL	10.8216 mL
5 mM	0.2164 mL	1.0822 mL	2.1643 mL
10 mM	0.1082 mL	0.5411 mL	1.0822 mL
50 mM	0.0216 mL	0.1082 mL	0.2164 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.

Reference

Grela E, et al. Imaging of human cells exposed to an antifungal antibiotic amphotericin B reveals the mechanisms associated with the drug toxicity and cell defence. Sci Rep. 2018 Sep 14;8(1):14067.
Sun C, Su J, Wang J, et al.Lycium barbarum polysaccharide increases thermogenesis and energy metabolism through modulation of the gut microbiota to confer resistance to cold temperatures.The FASEB Journal.2024, 38 (17): e70010.
Wu X, Wang Z, Liang Z, et al.Pleiotropic role of CCR9/CCL25 signaling in adriamycin-induced cardiomyopathy. Journal of Advanced Research.2024
Grela E, et al. Modes of the antibiotic activity of amphotericin B against Candida albicans. Sci Rep. 2019 Nov 19;9 (1):17029.
Andes D, Pet al. Pharmacodynamics of amphotericin B in a neutropenic-mouse disseminated-candidiasis model. Antimicrob Agents Chemother. 2001 Mar;45(3):922-6.
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Demaimay R, et al. J Gen Virol, 1994, 75 (Pt 9), 2499-2503.
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