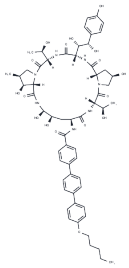
Data Sheet (Cat.No.T6088)

TargetMol

Anidulafungin

Chemical Properties



CAS No. : 166663-25-8

Formula: C58H73N7O17

Molecular Weight: 1140.24

Storage: Store at low temperature,Keep away from direct sunlight
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	Anidulafungin (Ecalta) (LY303366) is an echinocandin derivative used as an antifungal drug. It inhibits glucan synthase activity.
Targets(IC50)	Antibiotic,Antifungal
In vitro	Anidulafungin (LY-303366) demonstrates potent in vitro antifungal activity, with minimum inhibitory concentrations (MICs) of ≤0.32 μg/mL against all isolates of Candida albicans (n=99), Candida glabrata (n=18), and Candida tropicalis (n=10). It exhibits significant efficacy against Aspergillus species with a minimum effective concentration (MEC) of 0.02 μg/mL for 90% inhibition (n=20). However, its activity is reduced against Candida parapsilosis (MIC90, 5.12 μg/mL) (n=10), and it is ineffective against C. neoformans (MIC90 >10.24 μg/mL) (n=15) and B. dermatitidis (MIC90, 16 μg/mL) (n=29). Compared to fluconazole, anidulafungin retains low MICs (0.08 to 1.28 μg/mL) against fluconazole-resistant Candida strains, demonstrating a broad range of action. Strains showing resistance to CD101 exhibit a corresponding increase in MIC for anidulafungin and/or caspofungin, highlighting cross-resistance. This strong antifungal activity, notably against Candida species and Aspergillus, contrasts with its limited effects against C. neoformans and B. dermatitidis, for which ketoconazole and amphotericin B show superior efficacy.
Kinase Assay	FITC-S1P quantification/Caliper assay: A 384-well format of the SphK enzyme assay based on separation of FITC-S1P from unreacted FITC-sphingosine substrate using a microfluidic capillary electrophoresis mobility-shift system is developed. Briefly, 3 nM SphK1-His6 is incubated with 1 μM FITC-sphingosine, 20 μM ATP and 10 μM compound (a final concentration of DMSO of 2 %) in a buffer containing 100 mM Hepes (pH 7.4), 1 mM MgCl2,0.01% Triton X-100, 10% glycerol, 100 μM sodium orthovanadate and 1 mM DTT for 1 h in a 384-well Matrical MP-101-1-PP plate. Reaction mixtures (10 μL) are quenched by the addition of 20 μL of 30 mM EDTA and 0.15% Coating Reagent-3 in 100 mM Hepes, and a small aliquot of each reaction (a few nanolitres) is analysed in the Caliper LabChip 3000 instrument under -1.5 psi (psi=6.9 kPa) pressure, a downstream voltage of -1900 V and a sip time of 0.2 s. Phosphorylated fluorescent product and unphosphorylated fluorescent substrate appeared as distinctive peaks and are quantified using the Caliper data.

Cell Research	Anidulafungin is dissolved in DMSO and stored, and then diluted[2]. Stocks of CD101 (formerly SP 3025, biafungin, AF-025) are prepared fresh in 100% DMSO prior to use. The comparator antifungals Anidulafungin (ANF), Caspofungin (CSF), and Amphotericin B (AMB) are also prepared in 100% DMSO. MIC assays are performed via broth microdilution in accordance with CLSI guidelines, with the exception that test compounds are made up at a 50× final assay concentration and 100 µL assay mixture volumes are used (2 µL added to 98 µL of broth containing cells at 0.5×103 to 2.5×103 CFU/mL). All MIC assays are run at least three times, and a representative data set is shown. Quality control (QC) is assessed throughout the study via comparison of MIC values derived for WT C. krusei strain ATCC 6258 for AMB, CSF, and ANF with previously reported CLSI 24-h broth microdilution QC ranges[2].

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 93 mg/mL (81.56 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 3.3 mg/mL (2.89 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.877 mL	4.385 mL	8.7701 mL
5 mM	0.1754 mL	0.877 mL	1.754 mL
10 mM	0.0877 mL	0.4385 mL	0.877 mL
50 mM	0.0175 mL	0.0877 mL	0.1754 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

Zhanel GG, et al. In vitro activity of a new semisynthetic echinocandin, LY-303366, against systemic isolates of Candida species, Cryptococcus neoformans, Blastomyces dermatitidis, and Aspergillus species. Antimicrob Agents Chemother. 1997 Apr;41(4):863-5

Tsang C C, Tang J Y M, Chan K F, et al. Diversity of phenotypically non-dermatophyte, non-Aspergillus filamentous fungi causing nail infections: importance of accurate identification and antifungal susceptibility testing. Emerging Microbes & Infections. 2019, 8(1): 531-541

Locke JB, et al. Characterization of In Vitro Resistance Development to the Novel Echinocandin CD101 in Candida Species. Antimicrob Agents Chemother. 2016 Sep 23;60(10):6100-7.

Lau S K P, Xing F, Tsang C C, et al. Clinical characteristics, rapid identification, molecular epidemiology and antifungal susceptibilities of Talaromyces marneffei infections in Shenzhen, China. Mycoses. 2019, 62(5): 450-457

Wu X, Wang Z, Liang Z, et al.Pleiotropic role of CCR9/CCL25 signaling in adriamycin-induced cardiomyopathy. Journal of Advanced Research.2024

Lau S K P, Xing F, Tsang C C, et al. Clinical characteristics, rapid identification, molecular epidemiology and antifungal susceptibilities of Talaromyces marneffei infections in Shenzhen, China[J]. Mycoses. 2019 May;62(5): 450-457.

Diversity and Antifungal Susceptibilities of Yeasts from Mangroves in Hong Kong, China-A One Health Aspect

Tsang C C, Tang J Y M, Chan K F, et al. Diversity of phenotypically non-dermatophyte, non-Aspergillus filamentous fungi causing nail infections: importance of accurate identification and antifungal susceptibility testing[J]. Emerging microbes & infections. 2019;8(1):531-541.