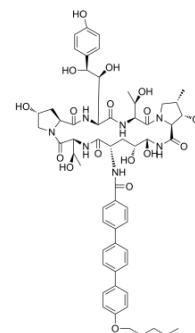


Anidulafungin

Cat. No.:	HY-13553		
CAS No.:	166663-25-8		
Molecular Formula:	C ₅₈ H ₇₃ N ₇ O ₁₇		
Molecular Weight:	1140.24		
Target:	Fungal; Antibiotic		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 30 mg/mL (26.31 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	0.8770 mL	4.3850 mL	8.7701 mL
	5 mM	0.1754 mL	0.8770 mL	1.7540 mL
	10 mM	0.0877 mL	0.4385 mL	0.8770 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (2.19 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Anidulafungin is a new semisynthetic echinocandin with antifungal potency.

IC₅₀ & Target

Antifungal^[1]

In Vitro

Anidulafungin (LY-303366) has MICs of ≤0.32 µg/mL for all *Candida albicans* (n=99), *Candida glabrata* (n=18), and *Candida tropicalis* (n=10) isolates tested. Anidulafungin is also active against *Aspergillus* species (minimum effective concentration at which 90% of the isolates are inhibited, 0.02 µg/mL) (n=20), is less active against *Candida parapsilosis* (MIC at which 90% of the isolates are inhibited [MIC90], 5.12 µg/mL) (n=10), and is inactive against *C. neoformans* (MIC90 >10.24 µg/mL) (n=15) and *B. dermatitidis* (MIC90, 16 µg/mL) (n=29). The MICs of Fluconazole for three strains of *C. tropicalis*, seven strains of *C. glabrata*, and two strains of *Candida krusei* are ≥16 µg/mL. The MICs of Anidulafungin for 11 of these 12 strains range from 0.08 to 0.32 mg/mL. The twelfth strain is a *C. krusei* strain (Fluconazole MIC, 32 µg/mL) for which the Anidulafungin MIC is

1.28 mg/mL. The MIC at which 90% of the isolates are inhibited (MIC₉₀) for these 12 strains is 0.32 µg/mL. The Anidulafungin MIC₉₀ for the remaining 18 *C. glabrata* isolates and *C. tropicalis* isolates for which the Fluconazole MICs are ≥ 8 µg/mL is also 0.32 mg/mL. Anidulafungin appears equally active against *Candida* species for which the fluconazole MICs are ≥16 mg/mL and against those for which the fluconazole MICs are ≥ 8 µg/mL. Anidulafungin has significantly less activity against *C. neoformans* and *B. dermatitidis* than against *C. albicans*, *C. glabrata*, and *C. tropicalis*. Ketoconazole and amphotericin B are the most active antifungal agents tested for both *C. neoformans* and *B. dermatitidis*. Anidulafungin demonstrated potent in vitro activity against *Aspergillus* species with a MEC₉₀ of 0.02 µg/mL. MICs of Anidulafungin for the control strain yeast isolates are 0.02 µg/mL for *C. albicans* ATCC 90028, 0.16 mg/mL for *C. glabrata* ATCC 90030, and >10.24 µg/mL for *C. neoformans* ATCC 90112^[1]. Strains selected with CD101 that have a 2-fold or greater CD101 MIC increase also have at least a 2-fold MIC increase for Anidulafungin (ANF) and/or Caspofungin (CSF)^[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay ^[2]

Stocks of CD101 (formerly SP 3025, bialfungin, 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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Clin Microbiol. 2017 Jun;55(6):1883-1893.
- mSphere. 2018 Nov 14;3(6). pii: e00547-18.
- Mycoses. 2020 Oct 21.

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REFERENCES

[1]. Zhanell 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

[2]. 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.

Caution: Product has not been fully validated for medical applications. For research use only.

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