Fidaxomicin

Cat. No.: HY-17580

CAS No.: 873857-62-6

Molecular Formula: $C_{52}H_{74}Cl_2O_{18}$

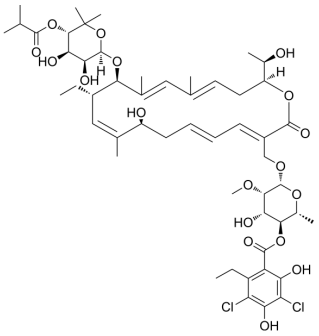
Molecular Weight: 1058.04

Target: Bacterial; Apoptosis; Antibiotic; DNA/RNA Synthesis

Pathway: Anti-infection; Apoptosis; Cell Cycle/DNA Damage

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 33 mg/mL (31.19 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.9451 mL	4.7257 mL	9.4514 mL
5 mM	0.1890 mL	0.9451 mL	1.8903 mL
10 mM	0.0945 mL	0.4726 mL	0.9451 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (2.36 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (2.36 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fidaxomicin (OPT-80), a macrocyclic antibiotic, is an orally active and potent RNA polymerase inhibitor. Fidaxomicin has a narrow spectrum of antibacterial activity and a good anti-Clostridium difficile activity (MIC_{90}=0.12 μg/mL). Fidaxomicin can be used for Clostridium difficile infection (CDI) research[1][2][3].

In Vitro

Fidaxomicin selectively eradicates pathogenic Clostridium difficile with minimal disruption to the multiple species of bacteria that make up the normal, healthy intestinal flora[1].

Fidaxomicin is not inhibitory to commonly cultured bowel commensals (MIC_{90} >1024 μg/mL)[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Fidaxomicin (0-5 mg/kg, Orally, once a day for 5 days) completely prevents the lethality of the animals and prevents the occurrence of relapses in a hamster model for pseudomembranous colitis[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Golden Syrian hamsters (80-100 g, Hamster model for pseudomembranous colitis)[3]
Dosage:	0.2, 1, and 5 mg/kg
Administration:	Orally, once a day for 5 days, beginning 8 h after infection
Result:	Completely prevented the lethality of the animals. Completely prevented the development of antibiotic-induced C. difficile colitis in hamsters at doses as low as 0.2 mg/kg.

CUSTOMER VALIDATION

- Cell Host Microbe. 2023 May 10;31(5):734-750.e8.
- BMC Med. 2020 Jul 31;18(1):204.
- Eur J Med Chem. 2023 Jul 3, 115620.
- Viruses. 2023 Sep 1, 15(9), 1872.
- Molecules. 2023 Dec 17;28(24):8142.

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REFERENCES

[1]. Tannock GW, et al. A new macrocyclic antibiotic, fidaxomicin (OPT-80), causes less alteration to the bowel microbiota of Clostridium difficile-infected patients than does vancomycin. Microbiology (Reading). 2010 Nov;156(Pt 11):3354-3359.

[2]. Ackermann G, Löffler B, Adler D, Rodloff AC. In vitro activity of OPT-80 against Clostridium difficile. Antimicrob Agents Chemother. 2004 Jun;48(6):2280-2.

[3]. Ackermann G, et al. In vitro activity of OPT-80 against Clostridium difficile. Antimicrob Agents Chemother. 2004 Jun;48(6):2280-2.

[4]. Poxton IR, et al. Fidaxomicin: a new macrocyclic, RNA polymerase-inhibiting antibiotic for the treatment of Clostridium difficile infections. Future Microbiol. 2010 Apr;5(4):539-48.

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