Product Data Sheet

Product Name: Solithromycin
Cat. No.: GC12833

Chemical Properties

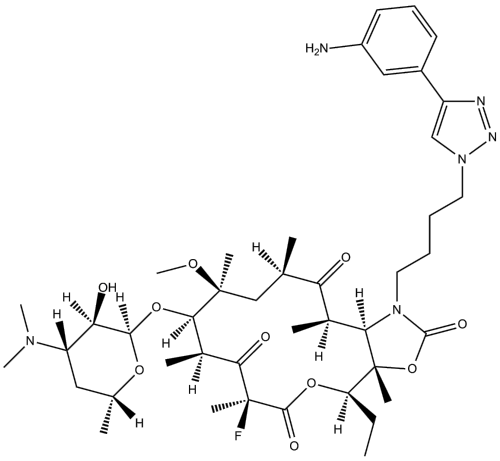
Cas. No.	760981-83-7
Chemical Name	(3aS,4R,7S,9S,10R,11S,13R,15R,15aR)-1-(4-(4-(3-aminophenyl)-1H-1,2,3-triazol-1-yl)butyl)-10-(((2R,3R,4S,6R)-4-(dimethylamino)-3-hydroxy-6-methyltetrahydro-2H-pyran-2-yl)oxy)-4-ethyl-7-fluoro-11-methoxy-3a,7,9,11,13,15-hexamethyloctahydro-1H-[1]oxacyclotet
SMILES	CC[C@](O1)([H])[C@@]2([C@@](N(C(O2)=O)CCCCN3C=C(N=N3)C4=CC(N)=CC=C4)([H])[C@@](C([C@](C[C@@]([C@@](O[C@]5([H])[C@@](O)([H])[C@](N(C)C)([H])C[C@@](O5)([H])C)([H])[C@](C([C@@](C1=O)(F)C)=O)([H])C)(OC)C)([H])C)=O)([H])C)C

Formula	$C_{43}H_{65}FN_6O_{10}$	M.Wt	845.01
Solubility	≥ 34.35mg/mL in DMSO	Storage	Store at -20°C

General tips: For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.

Shipping Condition: Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Background

Product Data Sheet

Solithromycin (CEM-101) is a new, potent and broad-spectrum fluoroketolide antibiotic [1][2].

Antibiotic is an antimicrobial used in the treatment and prevention of bacterial infection.

Solithromycin (CEM-101) is a broad-spectrum fluoroketolide antibiotic. CEM-101 exhibited high potency against diverse groups of Gram-positive and Gram-negative bacteria, including mycoplasma and ureaplasma, as well as bacteria associated with respiratory tract infections and skin infections, with MIC50 values of 0.015 μg/mL and 4 μg/mL, respectively [1]. Solithromycin (CEM-101) bound to the large 50S subunit of the ribosome and inhibited protein biosynthesis. In Streptococcus pneumoniae, Staphylococcus aureus, and Haemophilus influenzae, solithromycin inhibited cell viability, protein synthesis, and growth rate with IC50 values of 7.5, 40, and 125 ng/ml. Solithromycin also inhibition the formation of the 50S subunit [3]. In monocytic U937 cells, solithromycin inhibited TNFα/CXCL8 production and MMP9 activity. In PBMC isolated from chronic obstructive pulmonary disease (COPD) patients, solithromycin (10 μM) inhibited TNFα release and MMP9 activity. In monocytic U937 cells, solithromycin (10 μM) significantly inhibited NF-κB activity activated by oxidative stress [4].

In C57BL/6J mice, solithromycin also inhibited cigarette smoke-induced neutrophilia and pro-MMP9 production [4]. CEM-101 was also an effective antimicrobial for the prevention and treatment of intrauterine infection [2].

References:
[1]. Putnam SD, Castanheira M, Moet GJ, et al. CEM-101, a novel fluoroketolide: antimicrobial activity against a diverse collection of Gram-positive and Gram-negative bacteria. Diagn Microbiol Infect Dis, 2010, 66(4): 393-401.
[2]. Keelan JA, Kemp MW, Payne MS, et al. Maternal administration of solithromycin, a new, potent, broad-spectrum fluoroketolide antibiotic, achieves fetal and intra-amniotic antimicrobial protection in a pregnant sheep model. Antimicrob Agents Chemother, 2014, 58(1): 447-454.
[3]. Rodgers W, Frazier AD, Champney WS. Solithromycin inhibition of protein synthesis and ribosome biogenesis in Staphylococcus aureus, Streptococcus pneumoniae, and Haemophilus influenzae. Antimicrob Agents Chemother, 2013, 57(4): 1632-1637.
[4]. Kobayashi Y, Wada H, Rossios C, et al. A novel macrolide solithromycin exerts superior anti-inflammatory effect via NF-κB inhibition. J Pharmacol Exp Ther, 2013, 345(1): 76-84.

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