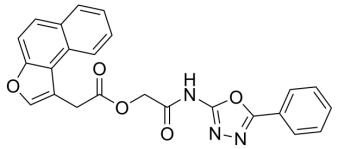
LtaS-IN-1

Cat. No.:	HY-135813
CAS No.:	877950-01-1
Molecular Formula:	$C_{24}H_{17}N_3O_5$
Molecular Weight:	427.41
Target:	Bacterial
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 : 125 mg/mL (292.46 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3397 mL	11.6984 mL	23.3967 mL
	5 mM	0.4679 mL	2.3397 mL	4.6793 mL
	10 mM	0.2340 mL	1.1698 mL	2.3397 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: 2.08 mg/mL (4.87 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.08 mg/mL (4.87 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.87 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

LtaS-IN-1 (compound 1771) is a potent small-molecule inhibitor of Lipoteichoic acid (LTA) synthesis in multidrug-resistant (MDR) E. faecium and by altering the cell wall morphology. LtaS-IN-1 alone inhibits Enterococcus.spp 28 strains with varying MIC values ranging from 0.5 μg/mL to 64 μg/mL. LtaS-IN-1 combination with antibiotics abolishs multidrug-resistant E. faecium growth almost completely[1].

IC_{50} & Target

MIC: 0.5 μg/mL (strain E1630); 0.5 μg/mL (strain E1590)[1]

In Vitro	LtaS-IN-1 (0-100 μM) inhibits strain E745 growth as a concentration-dependent manner. At the concentration 10 μM leads to an 60% reduction in the final OD600 for this strain. Meanwhile, LtaS-IN-1 does not affect E. faecium growth in control group [1]. LtaS-IN-1 is against Enterococcus spp 28 strains with varying MIC values ranging from 0.5 μg/mL to 64 μg/mL. LtaS-IN-1 inhibits strain E1630 and E1590 with the MIC values of 0.5μg/mL[1]. LtaS-IN-1 (20 μM) combines with either ampicillin (20 μg/mL), gentamicin (10 μg/mL), linezolid (5 μg/mL), daptomycin (10 μg/mL+50 μg/mL calcium chloride) or vancomycin (20 μg/mL) can inhibit strains E7128 and E7130 growth by 97-100%, while LtaS-IN-1 alone only gives 73% (strain E7128) and 8% (strain E7130) of growth inhibition, respectively[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- bioRxiv. 2023 Apr 10.

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REFERENCES

[1]. Paganelli FL, et al. Lipoteichoic acid synthesis inhibition in combination with antibiotics abrogates growth of multidrug-resistant Enterococcus faecium.Int J Antimicrob Agents. 2017 Mar;49(3):355-363.

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