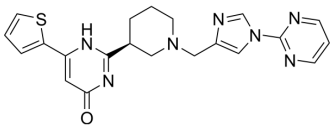
Ribocil-C

Cat. No.:	HY-19488A
CAS No.:	1825355-56-3
Molecular Formula:	$C_{21}H_{21}N_7OS$
Molecular Weight:	419.5
Target:	Bacterial
Pathway:	Anti-infection

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 : 110 mg/mL (262.22 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3838 mL	11.9190 mL	23.8379 mL
	5 mM	0.4768 mL	2.3838 mL	4.7676 mL
	10 mM	0.2384 mL	1.1919 mL	2.3838 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: ≥ 2.75 mg/mL (6.56 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.75 mg/mL (6.56 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ribocil-C is a highly selective inhibitor of bacterial riboflavin riboswitches.

IC_{50} & Target

Bacterial riboflavin riboswitches[1]

In Vitro

Ribocil-C is a highly selective inhibitor of the flavin mononucleotide (FMN) riboswitch that controls expression of de novo riboflavin (RF, vitamin B2) biosynthesis in Escherichia coli. Ribocil-C specifically inhibits dual FMN riboswitches, separately controlling RF biosynthesis and uptake processes essential for Staphylococcus aureus growth and pathogenesis[1]. Ribocil-C is a small-molecule synthetic mimic of FMN that binds the FMN riboswitch of multiple GN bacteria, including Escherichia coli , Pseudomonas aeruginosa, and Acinetobacter baumannii, to inhibit ribB expression, RF synthesis, and consequently arrest bacterial growth[1][2].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Higher dose Ribocil-C treatment groups (60 and 120 mg kg21 ribocil-C) demonstrate a dose-dependent reduction in bacterial burden of 1.87 and 3.29 log_{10}[CFU per g spleen] reduction respectively versus shamtreated mice, without mortality or gross effects of toxicity observed[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [2]	DBA/2J mice are infected by intraperitoneal injectionwith Escherichia coli strain MB5746 (5×10^4 CFU per mouse) and treated by subcutaneous injection with Ribocil-C (30, 60, 120 mg/kg) or ciprofloxacin (0.5mg/kg) three times over a 24 h infection period. Spleens are aseptically collected from five mice per group and the reduction of log[CFU per g spleen tissue] is calculated on the basis of bacterial burden in spleens of the vehicle-treated (10% DMSO) control group[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nucleic Acids Res. 2023 Feb 10;gkad051.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Wang H, et al. Dual-Targeting Small-Molecule Inhibitors of the Staphylococcus aureus FMN Riboswitch DisruptRiboflavin Homeostasis in an Infectious Setting. Cell Chem Biol. 2017 May 18;24(5):576-588.

[2]. Howe JA, et al. Selective small-molecule inhibition of an RNA structural element. Nature. 2015 Oct 29;526(7575):672-7.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA