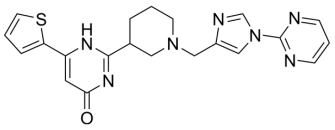
# Ribocil-C Racemate

| | |
|---|---|
| **Cat. No.:** | HY-19488 |
| **CAS No.:** | 2309762-18-1 |
| **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 | 6 months |
| | -20°C | 1 month |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 30 mg/mL (71.51 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Concentration \ Solvent \ Mass | 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.

## BIOLOGICAL ACTIVITY

**Description**

Ribocil-C Racemate is the racemate of Ribocil-C. 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].<br>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 ($5\times10^4$ 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].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## 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