

MUT056399

## Chemical Properties

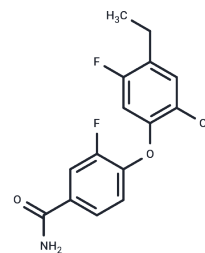
CAS No. : 1269055-85-7

Formula: C<sub>15</sub>H<sub>13</sub>F<sub>2</sub>N<sub>3</sub>O<sub>3</sub>

Molecular Weight: 293.27

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	MUT056399 (Fab-001) is a highly potent inhibitor of the FabI enzyme in both <i>S. aureus</i> and <i>E. coli</i> , with IC <sub>50</sub> values of 12 nM and 58 nM, respectively.
Targets(IC <sub>50</sub> )	Antibacterial
In vitro	MUT056399 is a highly potent new inhibitor of the FabI enzyme of both <i>Staphylococcus aureus</i> and <i>Escherichia coli</i> . In vitro, MUT056399 was very active against <i>S. aureus</i> strains, including methicillin-susceptible <i>S. aureus</i> (MSSA), methicillin-resistant <i>S. aureus</i> (MRSA), linezolid-resistant, and multidrug-resistant strains, with MIC(90)s between 0.03 and 0.12 µg/ml. MUT056399 was also active against coagulase-negative staphylococci, with MIC(90)s between 0.12 and 4 µg/ml. The antibacterial spectrum is consistent with specific FabI inhibition with no activity against bacteria using FabK but activity against FabI-containing Gram-negative bacilli. In vitro, resistant clones of <i>S. aureus</i> were obtained at a low frequency. All of the resistant clones analyzed were found to contain mutations in the <i>fabI</i> gene[1].
In vivo	In vivo, MUT056399, administered subcutaneously, protected mice from a lethal systemic infection induced by MSSA, MRSA, and vancomycin-intermediate <i>S. aureus</i> strains (50% effective doses ranging from 19.3 mg/kg/day to 49.6 mg/kg/day). In the nonneutropenic murine thigh infection model, the same treatment with MUT056399 reduced the bacterial multiplication of MSSA and MRSA in the thighs of immunocompetent mice[1]

## Solubility Information

Solubility	DMSO: 30 mg/mL (102.29 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	3.4098 mL	17.0491 mL	34.0983 mL
5 mM	0.682 mL	3.4098 mL	6.8197 mL
10 mM	0.341 mL	1.7049 mL	3.4098 mL
50 mM	0.0682 mL	0.341 mL	0.682 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Escaich S, et al. The MUT056399 inhibitor of FabI is a new antistaphylococcal compound. *Antimicrob Agents Chemother.* 2011 Oct;55(10):4692-7.

Schiebel J, et al. An ordered water channel in *Staphylococcus aureus* FabI: unraveling the mechanism of substrate recognition and reduction. *Biochemistry.* 2015 Mar 17;54(10):1943-55.

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