

NITD-349

Catalog No: tcsc0032639



Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Size: 100mg



Specifications

CAS No:

1473450-62-2

Formula:

$C_{17}H_{20}F_2N_2O$

Pathway:

Anti-infection

Target:

Bacterial

Purity / Grade:

>98%

Solubility:

DMSO : ≥ 310 mg/mL (1011.91 mM)

Observed Molecular Weight:

306.35

Product Description

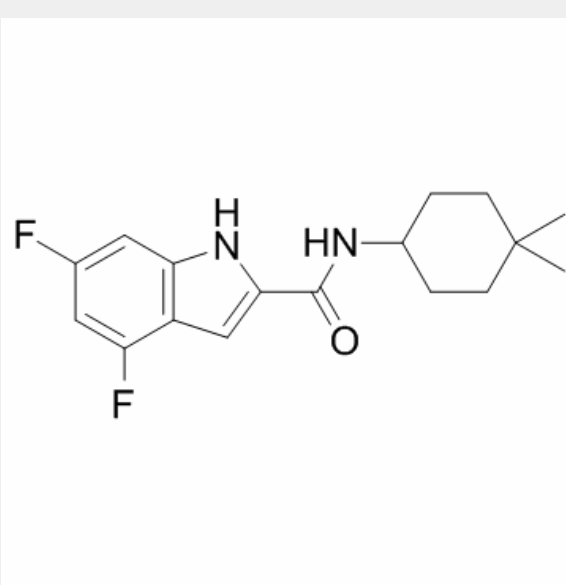
NITD-349 is an **MmpL3** inhibitor that shows highly potent anti-mycobacterial activity with **MIC₅₀** of 23 nM against virulent *Mycobacterium tuberculosis*

H37Rv.

IC50 & Target: MIC50: 23 nM (*Mycobacterium tuberculosis* H37Rv)^[1]

In Vitro: NITD-349 shows bactericidal activity against *in vitro* replicating *Mycobacterium tuberculosis* (Mtb) and also are active against intramacrophage Mtb. Kill kinetic analysis of these compounds showed both concentration- and time-dependent killing of Mtb cells with 3- to 4-log colony-forming unit (CFU) reduction within 3 days of treatment. The cidal activity profile of NITD-304 is similar to that of isoniazid for which rapid killing is noticed at concentrations greater than 0.2 μ M. The MIC activity of NITD349 against various MDR Mtb strains ranges from 0.04 to 0.08 μ M. NITD-349 shows high permeability and moderate *in vitro* metabolic clearance in mouse and human hepatic microsomes^[1].

In Vivo: In the acute murine efficacy model NITD-349 shows favorable oral pharmacokinetic (PK) properties in rodents and dogs and are efficacious in mouse models of both acute and chronic *Mycobacterium tuberculosis* infection. In the acute murine efficacy model, treatment of mice with NITD-349 at doses of 12.5 and 50 mg/kg resulted in 0.9- and 3.4-log CFU reduction in lung tissue. In an established infection mouse model, after 2 weeks of treatment, the efficacy of NITD-349 is comparable to the first-line TB drug rifampicin and is better than ethambutol. Four weeks of treatment at 100 mg/kg with NITD-349 results in 2.38-log CFU reductions^[1].



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