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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 **MIC_{50}** 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) reductionwithin 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 μM. The MIC activity of NITD349 against various MDR Mtb strains ranges from 0.04 to 0.08 μM. 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 modelNITD-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].