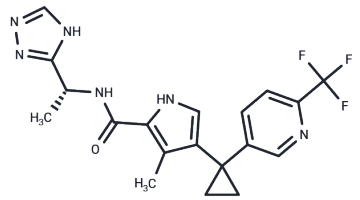
Data Sheet (Cat.No.T40291)

TargetMol
YOUR TARGET MOLECULES

DSM705

Chemical Properties



CAS No. : 2653225-38-6

Formula: C19H19F3N6O

Molecular Weight: 404.397

Appearance: no data available

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

Biological Description

Description	DSM705 is a pyrrole-based inhibitor of Dihydroorotate Dehydrogenase (DHODH). It demonstrates high potency in the nanomolar range against Plasmodium DHODH and Plasmodium parasites, while not interfering with mammalian DHODHs. DSM705 shows significant efficacy as an antimalarial compound.
In vitro	DSM705 exhibits inhibitory activity against both P. falciparum DHODH (Pf DHODH, IC50=95 nM) and P. vivax DHODH (Pv DHODH, IC50=52 nM), as well as Pf 3D7 cells (EC50=12 nM), without inhibiting the human counterpart of the enzyme[1].
In vivo	DSM705, when administered orally at doses ranging from 3-200 mg/kg twice daily for 6 days, achieves optimal parasite eradication at a 50 mg/kg dosage, completely eliminating parasitemia by the 7th or 8th day. In Swiss outbred mice, a single oral dose of DSM705 at 2.6 and 24 mg/kg demonstrates high oral bioavailability (74%, 70%), extended half-life (3.4, 4.5 hours), and peak concentration (C max) values of 2.6 and 20 μM, respectively. Furthermore, a single intravenous dose of 2.3 mg/kg in mice results in a clearance rate (CL) of 2.8 mL/min/kg and a steady-state volume of distribution (V ss) of 1.3 L/kg. The efficacy of DSM705 was tested in SCID mice inoculated with parasites, with oral doses (p.o.) administered twice daily for 6 days across varying concentrations (3, 10, 20, 50, 100, 200 mg/kg), demonstrating dose-dependent parasite eradication and complete suppression of parasitemia by days 7-8. Similarly, pharmacokinetic analysis in Swiss Outbred Mice with doses of 2.6 and 24 mg/kg for oral administration and 2.3 mg/kg for intravenous (i.v.) administration showed notable outcomes in bioavailability, half-life, concentration maxima, clearance, and distribution volume.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.4728 mL	12.364 mL	24.728 mL
5 mM	0.4946 mL	2.4728 mL	4.9456 mL
10 mM	0.2473 mL	1.2364 mL	2.4728 mL
50 mM	0.0495 mL	0.2473 mL	0.4946 mL

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.

Reference

Palmer MJ, et, al. Potent Antimalarials with Development Potential Identified by Structure-Guided Computational Optimization of a Pyrrole-Based Dihydroorotate Dehydrogenase Inhibitor Series. J Med Chem. 2021 May 13;64(9):

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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