Product Datasheet

DSM705

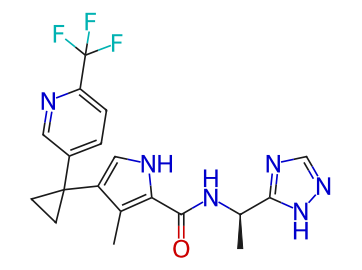
Catalog No. **BP-02160** · CAS **2653225-38-6** · Form **free base** · Physical state **other** · Version **1.0** · Revision **2026-09-04**

FOR RESEARCH USE ONLY. NOT FOR HUMAN OR VETERINARY USE.

Target	Research area
Dihydroorotate Dehydrogenase; Parasite	**Infection**

Molecular formula	**$C_{19}H_{19}F_3N_6O$**
Molecular weight	**404.3890**

STRUCTURE



DESCRIPTION

DSM705 is a pyrrole-based Dihydroorotate Dehydrogenase (DHODH) inhibitor. DSM705 exhibits nanomolar potency against Plasmodium DHODH and Plasmodium parasites, with no inhibition of mammalian DHODHs. DSM705 is a potent antimalarial compound.

BIOLOGICAL ACTIVITY

In Vitro

DSM705 shows inhibitory activity against P. falciparum DHODH (PfDHODH, IC50=95 nM), P. vivax DHODH (PvDHODH, IC50=52 nM) and Pf3D7 cells (EC50=12 nM), with no inhibition of the human enzyme.

In Vivo

DSM705 (3-200 mg/kg; p.o. twice a day for 6 days) provides the maximum rate of parasite killing at the dose of 50 mg/kg and fully suppresses parasitemia by days 7-8.

DSM705 (2.6 and 24 mg/kg; a single p.o.) exhibits high oral bioavailability (74%, 70%), apparent t1/2 (3.4, 4.5 h) and Cmax (2.6, 20 μM) in Swiss outbred mice.

DSM705 (2.3 mg/kg; a single i.v.) exhibits plasma clearance (CL=2.8 mL/min/kg) and Vss (1.3 L/kg) in mice.

SOLUBILITY

Soluble in DMSO

REFERENCES

[1]. 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):6085-6136.

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