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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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CHIKV-IN-2

Cat. No.: HY-132174

CAS No.: 2361289-44-1

Molecular Formula: $C_{23}H_{26}N_2O_2$

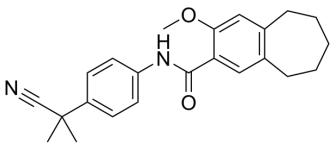
Molecular Weight: 362.46

Target: Dihydroorotate Dehydrogenase; Flavivirus; Dengue virus

Pathway: Metabolic Enzyme/Protease; Anti-infection

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (275.89 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7589 mL	13.7946 mL	27.5893 mL
	5 mM	0.5518 mL	2.7589 mL	5.5179 mL
	10 mM	0.2759 mL	1.3795 mL	2.7589 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (6.90 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.90 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.90 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

CHIKV-IN-2 is a potent inhibitor against Chikungunya virus (CHIKV), with excellent cellular antiviral activity (EC_{90}=270 nM) and improved liver microsomal stability. CHIKV-IN-2 shows inhibitory activity against a cellular target Dihydroorotate Dehydrogenase (DHODH), which interacts with various viruses and regulate their replication via depleting intracellular pyrimidine pools[1].

IC_{50} & Target

EC90: 270 nM (Chikungunya virus)[1]
Dihydroorotate Dehydrogenase[1]

In Vitro

CHIKV-IN-2 (compound 8q) is a potent pan-alphavirus inhibitor, with EC_{90}s of 0.85-2.5 μM for CHIKV clinical isolates and attenuated vaccine strains[1].

CHIKV-IN-2 is active against alphavirus VEEV (EC_{90}=0.40 μM) as well as flaviviruses such as West Nile Virus (WNV, EC_{90}=0.20 μM) and Dengue Virus Strain-2 (DENV-2, EC_{90}=0.60 μM)[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

CHIKV-IN-2 (compound 8q) (80 mg/kg; i.p. twice a day for 3 days) significantly decreases infectious CHIKV dissemination to other tissues of mice[1].

CHIKV-IN-2 (40 mg/kg; p.o., i.p., s.c.) exhibits moderate bioavailability (F=41%, 43%, 4%), terminal elimination half-life ($t_{1/2}$ =9.9, 18.5, 18.6 h) and C_{max} (642, 858, 90 ng/mL) in mice[1].

CHIKV-IN-2 (1 mg/kg; i.v.) exhibits terminal elimination half-life ($t_{1/2}$= 2.02 h) and AUC (497 h•ng/mL) in mice[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female and male C57BL/6 mice[1]
Dosage:	80 mg/kg
Administration:	I.p. twice a day for 3 days
Result:	Failed to inhibit virus loads at the site of infection. Decreased virus dissemination to other tissues.

Animal Model:	Male C57BL/6 mice were challenged with CHIKV in the right footpad[1]
Dosage:	1 mg/kg for i.v. and 40 mg/kg for p.o., i.p., s.c. (Pharmacokinetic Analysis)
Administration:	I.v., p.o., i.p., s.c.
Result:	I.v.: $t_{1/2}$= 2.02 h; AUC=497 h•ng/mL. P.o.: F=41%; $t_{1/2}$=9.9 h; C_{max}=642 ng/mL. I.p.: F=43%; $t_{1/2}$=18.5 h; C_{max}=858 ng/mL. S.c.: F=4%; $t_{1/2}$=18.6 h; C_{max}=90 ng/mL.

REFERENCES

[1]. Ahmed SK, et, al. Targeting Chikungunya Virus Replication by Benzoannulene Inhibitors. J Med Chem. 2021 Apr 22;64(8):4762-4786.

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