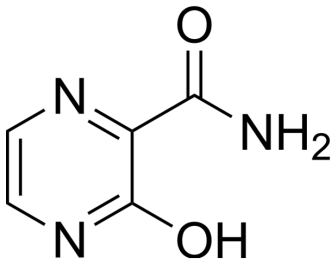
T-1105

Cat. No.:	HY-W015764
CAS No.:	55321-99-8
Molecular Formula:	$C_5H_5N_3O_2$
Molecular Weight:	139.11
Target:	Flavivirus
Pathway:	Anti-infection
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (179.71 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	7.1886 mL	35.9428 mL	71.8856 mL
	5 mM	1.4377 mL	7.1886 mL	14.3771 mL
	10 mM	0.7189 mL	3.5943 mL	7.1886 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 (17.97 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (17.97 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

T-1105, a structural analogue of T-705, is a novel broad-spectrum viral polymerase inhibitor. T-1105 inhibits the polymerases of RNA viruses after being converted to ribonucleoside triphosphate (RTP) metabolite. T-1105 has antiviral activity against various RNA viruses. T-1105 can be formed by nicotinamide mononucleotide adenylyltransferase[1][2].

IC_{50} & Target

EC50: 17 μM (parainfluenza-3 virus); EC50: 24 μM (Punta Toro virus) [3].
EC50: 97.5 μM (ZIKV strain SZ01) [4]

In Vitro

T-1105 has antiviral activity against various RNA viruses, including Zika virus (ZIKV), influenza virus, arenaviruses, bunyaviruses, West Nile virus (WNV), yellow fever virus (YFV), and foot-and-mouth disease virus (FMDV)[1][2].
T-1105 has good anti-RNA virus activity with values EC_{50} of 17 μM and 24 μM for parainfluenza-3 virus and Punta Toro virus in

MDCK cells[3].
T-1105 is a potential inhibitor of Zika virus replication[4].
T-1105 can inhibit the SFTSV replication with an value IC_{50} of 49 μM in Vero cells and is not affect cell viability in 0-3 μM[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay[4]

Cell Line:	Vero cells
Concentration:	1-4 μM
Incubation Time:	72 h
Result:	Had potential antiviral activity against ZIKV strain SZ01 with an value EC_{50} of 97.5 μM in Vero cells.

Cell Viability Assay[5]

Cell Line:	Vero cells
Concentration:	0-3 μM
Incubation Time:	4 h
Result:	Did not affect cell viability in the test range (0-3 μM).

In Vivo

T-1105 (Oral, 200 mg/kg, twice daily for 6 days) effectively inhibits the virus replication in the infected pigs[6].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Pigs[6]
Dosage:	200 mg/kg
Administration:	Oral, 200 mg/kg, twice daily for 6 days
Result:	Reduced Viremia and increased anti-FMD antibody titers, did not observe any clinical signs of FMD.

CUSTOMER VALIDATION

- Mbio. 2022 Sep 15;e0143422.

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REFERENCES

[1]. Johanna Huchting, et al. Cell line-dependent activation and antiviral activity of T-1105, the non-fluorinated analogue of T-705 (favipiravir). Antiviral Res. 2019 Jul;167:1-5.

[2]. Lei Cai, et al. Viral polymerase inhibitors T-705 and T-1105 are potential inhibitors of Zika virus replication. Arch Virol. 2017 Sep;162(9):2847-2853.

[3]. Hideki Tani, et al. Efficacy of T-705 (Favipiravir) in the Treatment of Infections with Lethal Severe Fever with Thrombocytopenia Syndrome Virus.

[4]. Yousuke Furuta, et al. T-705 (favipiravir) and related compounds: Novel broad-spectrum inhibitors of RNA viral infections. Antiviral Res. 2009 Jun;82(3):95-102.

[5]. Huchting J, et al. Cell line-dependent activation and antiviral activity of T-1105, the non-fluorinated analogue of T-705 (favipiravir). Antiviral Res. 2019 Jul;167:1-5.

[6]. Furuta Y, et al. T-705 (favipiravir) and related compounds: Novel broad-spectrum inhibitors of RNA viral infections. Antiviral Res. 2009 Jun;82(3):95-102.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA