Data Sheet (Cat.No.T6833)

TargetMol

Favipiravir

Chemical Properties

CAS No. : 259793-96-9

Formula: C5H4FN3O2

Molecular Weight: 157.103

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Favipiravir is a potent and selective RNA-dependent RNA polymerase inhibitor for the treatment of influenza virus infections.
Targets(IC50)	Antibacterial,DNA/RNA Synthesis,Influenza Virus,SARS-CoV
In vitro	**METHODS**: RAW 264.7 cells were infected with MNV at an MOI of 0,001 using a T-705 dilution series (3.13-200 lg/mL). The MTS CPE reduction method was used to determine the antiviral activity of T-705 in the MNV/RAW 264.7 cell line. After 3 days of incubation, complete CPE was observed in the infected untreated cells. The cell culture supernatant was collected and analyzed by quantitative RT- PCR (qRT-PCR) quantitatively detects viral RNA load. **RESULTS** T-705 inhibited MNV-induced CPE (EC50: 39 ± 4 lg/mL [250 ± 11 lM]) and MNV RNA synthesis in cell culture (EC50: 19 ± 6 lg/mL [124 ± 42 lM]). [2]
In vivo	**METHODS**: When Favipiravir (T-705) is used at a dose of 1-100mg/kg and infected with a lethal dose of influenza virus A/Victoria/3/75 (H3N2), A/Osaka/5/70 (H3N2) or A/Duck/MN/1525/81 (H5N1) was administered orally 2 or 4 times a day to mice for 5 days, and the survival rate of the mice was observed. **RESULTS** Favipiravir (T-705) showed improved survival compared with placebo at doses of 30 mg/kg/day or higher, the drug was also administered at doses of 33 mg/kg/day or higher Provides significant protection against A/Duck/MN/1525/81 (H5N1) virus. [1] **METHODS**: Favipiravir was administered at 120 mg/kg/day or 200 mg/kg/day on days 1-5 after lethal SFTSV infection in type I interferon receptor knockout (IFNAR −/−) mice. (T-705) and continued for 5 days to observe the growth status of the mice. **RESULTS** All favipiravir-treated mice at doses of 120 mg/kg/day or 200 mg/kg/day, respectively, survived lethal SFTSV infection when treatment was initiated within 3 and 4 days of infection. [3]
Cell Research	The cytotoxicity of T-705 is evaluated by an assay with XTT. XTT is converted to aqueous formazan by an enzyme in MDCK cells, Vero cells, HEL cells, A549 cells, HeLa cells, and HEp-2 cells. The compounds are diluted to the appropriate concentrations (volume, 100 µl) with test medium (EMEM containing 10% FCS) in 96-well culture plates in which each well contains a concentration of 2 × 103 cells/100 µL. The test plates are incubated for 3 days at 37°C in 100% humidity and 5% CO2. After 3 days, 50 µl of the XTT reagent (1 mg/ml in FCS-free EMEM containing 5 mM phenazine methosulfate) is added, and the reaction product is assayed by measurement of the absorbance at 450 nm with a

Cell Research	microplate reader. Cytotoxicity is expressed as the 50% cell-inhibitory concentration (CC50).(Only for Reference)

Solubility Information

Solubility	Ethanol: 12.00 mg/mL (76.38 mM),Sonication is recommended. H2O: 5.00 mg/mL (31.83 mM),Sonication is recommended. DMSO: 126.00 mg/mL (802.02 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4.00 mg/mL (25.46 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	6.3654 mL	31.8269 mL	63.6537 mL
5 mM	1.2731 mL	6.3654 mL	12.7307 mL
10 mM	0.6365 mL	3.1827 mL	6.3654 mL
50 mM	0.1273 mL	0.6365 mL	1.2731 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Furuta Y,et al. Favipiravir (T-705), a novel viral RNA polymerase inhibitor. Antiviral Res. 2013 Nov;100(2):446-54.
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Rocha-Pereira J, et al. Favipiravir (T-705) inhibits in vitro norovirus replication. Biochem Biophys Res Commun. 2012 Aug 10;424(4):777-80.
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Zhang J, He M, Xie Q, et al.Predicting In Vitro and In Vivo Anti-SARS-CoV-2 Activities of Antivirals by Intracellular Bioavailability and Biochemical Activity.ACS Omega.2022
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Westover J B, Jung K H, Alkan C, et al.Modeling Heartland virus disease in mice and therapeutic intervention with 4′-fluorouridine.Journal of Virology.2024: e00132-24.