Datasheet

BSV-S7975

Product Name	Favipiravir (T-705)
Catalogue Number	BSV-S7975
Chemical Formula	$C_5H_4FN_3O_2$
Function	RNA synthesis inhibitor
CAS No.:	259793-96-9

Description:

Favipiravir (T-705) is a potent and selective **RNA-dependent RNA polymerase** inhibitor, used to treat influenza virus infections.

Product Details:

Target: RNA-dependent RNA polymerase

Chemical name: 6-fluoro-3-hydroxypyrazine-2-carboxamide

Formula: $C_5H_4FN_3O_2$

Molecular weight: 157.1

Purity: 99.95 % (HPLC)

Solubility: 31 mg/mL (DMSO), 20 mg/mL (ethanol), 12 mg/mL water

Storage: 3 years -20°C powder, 2 years -80°C in solvent

Regulatory/ Restrictions: For laboratory use only.

Biological Activity:

In vitro:
Favipiravir shows anti-influenza virus activities with IC50 ranged from 0.013 to 0.48 μg/ml for the influenza A viruses, from 0.039 to 0.089 μg/ml for the influenza B viruses, and from 0.030 to 0.057 μg/ml for the influenza C viruses. In mammalian cell lines (MDCK cells, Vero cells, HEL

cells, A549 cells, HeLa cells, and HEp-2 cells), Favipiravir shows no cytotoxicity at concentrations up to 1,000 μg/ml. [1] In MDCK cells inoculated with seasonal influenza A (H1N1) viruses, Favipiravir induces lethal mutagenesis. [2]

In vivo:
In influenza virus-infected mice, Favipiravir (200 mg/kg/day, p.o.) protects the mice from death from influenza virus infection. [1] In mice experimentally infected with Ebola virus, Favipiravir efficiently blocks viral production, reaching an antiviral effectiveness of 95% and 99.6% at 2 and 6days after initiation of treatment, respectively. [3]

Preparing stock solutions

Concentration/ Mass	1 mg	5 mg	10 mg
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

Protocol (only for reference)

Cell lines	MDCK cells, Vero cells, HEL cells, A549 cells, HeLa cells, and HEp-2 cells
Concentrations	1000 μg/mL
Incubation Time	3 days
Method	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 2×10^3 cells/100 μL. The test plates are incubated for 3 days at 37°C in 100% humidity and 5% CO_2. 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 microplate reader. Cytotoxicity is expressed as the 50% cell-inhibitory concentration (CC50).

Animal study

- **Animal Models:** Mice infected with influenza virus A/PR/8/34
  Formulation: 0.5% methylcellulose
- **Dosages:** 200 mg/kg/day
- **Administration:** p.o.

References:

[1] Furuta Y, et al. Antimicrob Agents Chemother. 2002, 46(4), 977-981.
[2] Baranovich T, et al. J Virol. 2013, 87(7), 3741-3751.
[3] Madelain V, et al. Antiviral Res. 2015, 123, 70-77.