Data Sheet (Cat.No.T7222)

TargetMol

GS-441524

Chemical Properties

CAS No. : 1191237-69-0

Formula: C12H13N5O4

Molecular Weight: 291.263

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	GS-441524 treatment of cats with naturally occurring feline infectious peritonitis.
Targets(IC50)	DNA/RNA Synthesis,SARS-CoV
In vivo	Four of the 31 cats that presented with severe disease died or were euthanized within 2-5 days and a fifth cat after 26 days. The 26 remaining cats completed the planned 12 weeks or more of treatment(GS-441524). Eighteen of these 26 cats remain healthy at the time of publication after one round of treatment, while eight others suffered disease relapses within 3-84 days. Six of the relapses were non-neurological and two neurological. Three of the eight relapsing cats were treated again at the same dosage, while five cats had the dosage increased from 2.0 to 4.0 mg/kg q24h. The five cats treated a second time at the higher dosage, including one with neurological disease, responded well and also remain healthy . However, one of the three cats re-treated at the original lower dosage relapsed with neurological disease and was euthanized, while the two remaining cats responded favorably but relapsed a second time. These two cats were successfully treated a third time at the higher dosage, producing 25 long-time survivors. One of the 25 successfully treated cats was subsequently euthanized due to presumably unrelated heart disease, while 24 remain healthy[1].
Animal Research	Cats ranged from 3.4-73 months of age (mean 13.6 months); 26 had effusive or dry-to-effusive FIP and five had non-effusive disease. Cats with severe neurological and ocular FIP were not recruited. The group was started on GS-441524 at a dosage of 2.0 mg/kg SC q24h for at least 12 weeks and increased when indicated to 4.0 mg/kg SC q24h[1].

Solubility Information

Solubility	DMSO: 247.50 mg/mL (849.75 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: 2.00 mg/mL (6.87 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	3.4334 mL	17.1668 mL	34.3336 mL
5 mM	0.6867 mL	3.4334 mL	6.8667 mL
10 mM	0.3433 mL	1.7167 mL	3.4334 mL
50 mM	0.0687 mL	0.3433 mL	0.6867 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

Pedersen N C , Perron M , Bannasch M , et al. Efficacy and safety of the nucleoside analog GS-441524 for treatment of cats with naturally occurring feline infectious peritonitis[J]. Journal of Feline Medicine & Surgery, 2019.
Wang Q, Wu J, Wang H, et al. Structural basis for RNA replication by the SARS-CoV-2 polymerase. Cell. 2020, 182 (2): 417-428. e13.
Bennett R P, Postnikova E N, Eaton B P, et al. Sangivamycin is highly effective against SARS-CoV-2 in vitro and has favorable drug properties. JCI insight. 2022, 7(1).
Murphy B G , Perron M , Murakami E , et al. The nucleoside analog GS-441524 strongly inhibits feline infectious peritonitis (FIP) virus in tissue culture and experimental cat infection studies[J]. Veterinary Microbiology, 2018, 219: 226-233.
Xu L, Tan B, Huang D, et al. Remdesivir inhibits renal fibrosis in obstructed kidneys. Frontiers in Pharmacology. 2021, 12: 1668
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Mohseni N, Royster A, Ren S, et al.A novel compound targets the feline infectious peritonitis virus nucleocapsid protein and inhibits viral replication in cell culture.Journal of Biological Chemistry.2023: 102976.