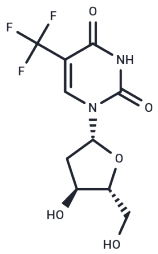
Data Sheet (Cat.No.T1428)

TargetMol

Trifluridine

Chemical Properties



CAS No. : 70-00-8

Formula: C10H11F3N2O5

Molecular Weight: 296.2

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	Trifluridine (NSC-75520) is a fluorinated thymidine analog with potential antineoplastic activity. Trifluridine is incorporated into DNA and inhibits thymidylate synthase, resulting in inhibition of DNA synthesis, inhibition of protein synthesis, and apoptosis. This agent also exhibits antiviral activity.
Targets(IC50)	Apoptosis,Nucleoside Antimetabolite/Analog,Autophagy,HSV,DNA/RNA Synthesis,Virus Protease
In vitro	Differences in substrate specificity at TK1 and DUT resulted in substantial Trifluridine (FTD) incorporation into DNA. Trifluridine-treated cells display nuclear morphology compared to 2'-deoxy-5-fluorouridine-treated cells.Trifluridine dose-dependently inhibits the proliferation of human colorectal cancer cells transplanted into nude mice and mouse bone marrow cells.Trifluridine dose-dependently inhibits colony-forming bone marrow cells.
In vivo	Differences in substrate specificity at TK1 and DUT resulted in substantial Trifluridine (FTD) incorporation into DNA. Trifluridine-treated cells display nuclear morphology compared to 2'-deoxy-5-fluorouridine-treated cells.Trifluridine dose-dependently inhibits the proliferation of human colorectal cancer cells transplanted into nude mice and mouse bone marrow cells.Trifluridine dose-dependently inhibits colony-forming bone marrow cells.

Solubility Information

Solubility	H2O: 14.8 mg/mL (49.97 mM),Sonication is recommended. DMSO: 255 mg/mL (860.9 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: 5 mg/mL (16.88 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	3.3761 mL	16.8805 mL	33.761 mL
5 mM	0.6752 mL	3.3761 mL	6.7522 mL
10 mM	0.3376 mL	1.688 mL	3.3761 mL
50 mM	0.0675 mL	0.3376 mL	0.6752 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

Yamashita F, et al. Cancer Chemother Pharmacol,2015 Jun 18.
Dsouza L, Pant A, Offei S, et al.Antiviral activities of two nucleos (t) ide analogs against vaccinia, mpox, and cowpox viruses in primary human fibroblasts.Antiviral Research.2023: 105651.
Luo P Q, Zhang L X, Chen Z M, et al.Effects and mechanisms of trifluridine alone or in combination with cryptotanshinone in inhibiting malignant biological behavior of gastric cancer.Cell Cycle.2023: 1-15.
Sakamoto K, et al. Int J Oncol,2015, 46(6), 2327-2334.
Germano A, et al. Mol Cell Endocrinol. 2014 Jan 25;382(1):1-7.
Rootman DS, et al. Invest Ophthalmol Vis Sci,1989, 30(4), 678-683.
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