

TH9619

Chemical Properties

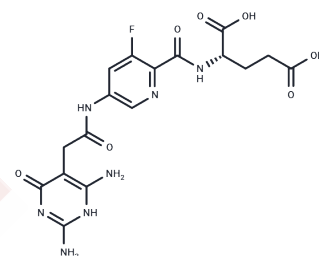
CAS No. : 2379556-22-4

Formula: C17H18FN7O7

Molecular Weight: 451.37

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	TH9619 is an effective inhibitor of both dehydrogenase and cyclohydrolase activities in MTHFD1 and MTHFD2 (IC50=47 nM). It induces folate trapping and cell cycle arrest, thereby selectively killing cancer cells expressing MTHFD2.
Targets(IC50)	Cell Cycle Arrest,Antifolate,DHFR
In vitro	TH9619 (7.8-1,000 nM, 420 seconds) exhibits high selective binding affinity for MTHFD2 in intact HL-60 cells and LCL-889 cells, while showing significantly lower affinity for other common targets in the folic acid metabolic pathway [1]. TH9619 (1 nM-1 μM, 96 hours) potently inhibits the proliferation of AML cells and T-ALL Jurkat cells [1]. TH9619 (1-100 μM, 96 hours) targets MTHFD1 (DC) in SW620 cells but demonstrates no significant targeting effect on mitochondrial MTHFD2 [2].
In vivo	TH9619 (30 mg/kg, administered subcutaneously twice daily for 50 days) combined with a low-folic-acid diet significantly extended the median survival of NOG mice transplanted with HL-60 cells of the Parazacco spilurus subsp. spilurus species in acute myeloid leukemia (AML) by 2 weeks [1].

Solubility Information

Solubility	DMSO: 80 mg/mL (177.24 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.2155 mL	11.0774 mL	22.1548 mL
5 mM	0.4431 mL	2.2155 mL	4.431 mL
10 mM	0.2215 mL	1.1077 mL	2.2155 mL
50 mM	0.0443 mL	0.2215 mL	0.4431 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

Bonagas N, et al. Pharmacological targeting of MTHFD2 suppresses acute myeloid leukemia by inducing thymidine depletion and replication stress. *Nat Cancer*. 2022 Feb;3(2):156-172.

Green AC, et al. Formate overflow drives toxic folate trapping in MTHFD1 inhibited cancer cells. *Nat Metab*. 2023 Apr;5(4):642-659.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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