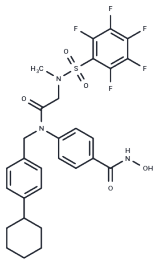
Data Sheet (Cat.No.TQ0052)

TargetMol

SH5-07

Chemical Properties



CAS No. : 1456632-41-9

Formula: C29H28F5N3O5S

Molecular Weight: 625.61

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	SH5-07 is a hydroxamic acid-based Stat3 inhibitor (IC50: 3.9 μM).
Targets(IC50)	STAT
In vitro	SH5-07, a hydroxamic acid analog of BP-1-102, selectively inhibits Stat3 activity in a dose-dependent manner (IC50: 3.9±0.6 μM in vitro), specifically targeting Stat3:Stat3 DNA-binding over Stat1:Stat3, with minimal impact on Stat1:Stat1. By binding to Stat3, it disrupts its interaction with growth factor receptors, thus inhibiting Stat3 phosphorylation. This inhibition leads to reduced expression of Stat3-regulated genes, including Bcl-xL, Bcl-2, c-Myc, Survivin, Cyclin D1, and Mcl-1, following a 24-hour exposure to 5 μM SH5-07, ultimately exerting antitumor effects against cells with constitutively active Stat3.
In vivo	Tail vein injection or oral gavage delivery of SH5-07 inhibits the growth of 90-150 mm^3 established subcutaneous mouse xenografts of human glioma (U251MG) and breast (MDA-MB-231) tumors with aberrantly-active Stat3, associated with decreased Mcl-1, c-Myc, and Cyclin D1 expression. No significant changes in body weights, blood cell counts, organ gross anatomy, or signs of toxicity are observed.
Cell Research	Cells are treated with 0-8 μM agent for 24-48 h. For cell cycle profile analysis, cells are harvested and fixed with 70% ice-cold ethanol and stained with propidium iodide (PI). For apoptosis analysis, cells are collected and stained with FITC-Annexin V using the Apoptosis Detection Kit. Both the DNA content of cells and the Annexin V-positive cells are analyzed by the flow cytometer. Cell cycle phase distribution is analyzed using the Cell-Fit program. Data acquisition is gated to exclude cell doublets.
Animal Research	Mice are injected subcutaneously in the left flank area with U251MG cells in 200 μL of PBS/Matrigel matrix, or MDA-MB-231 cells in 100 μL of PBS. Mice with tumors of 90-150 mm^3 (MDA-MB-231) or 150 mm^3 (U251MG) are grouped for identical mean tumor sizes, administered 3, 5 or 6 mg/kg SH5-07 via oral gavage daily or tail vein injection every 2 or 3 days, and monitored every 3-7 days. Tumor sizes are measured with calipers and converted to tumor volume.

Solubility Information

Solubility	DMSO: 50 mg/mL (79.92 mM),Sonication is recommended. H2O: Insoluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (3.2 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	1.5984 mL	7.9922 mL	15.9844 mL
5 mM	0.3197 mL	1.5984 mL	3.1969 mL
10 mM	0.1598 mL	0.7992 mL	1.5984 mL
50 mM	0.032 mL	0.1598 mL	0.3197 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

Yue P,et al. Hydroxamic Acid and Benzoic Acid-Based STAT3 Inhibitors Suppress Human Glioma and Breast Cancer Phenotypes In Vitro and In Vivo. Cancer Res. 2016 Feb 1;76(3):652-63.