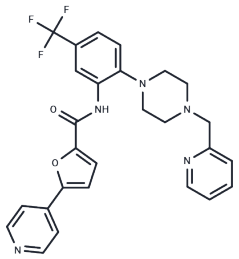
Data Sheet (Cat.No.T5194)

TargetMol

SPHINX31

Chemical Properties



CAS No. : 1818389-84-2

Formula: C27H24F3N5O2

Molecular Weight: 507.51

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	SPHINX31 is a potent inhibitor of serine/arginine-rich protein kinase 1 (SRPK1; IC50: 5.9 nM).
Targets(IC50)	Serine/threonin kinase,VEGFR
In vitro	SPHINX31 inhibits phosphorylation of serine/arginine-rich splicing factor 1 (SRSF1), an SRPK1 substrate, in PC3 cells (EC50: 360 nM) and increases expression of the anti-angiogenic VEGF-A165b splice variant in retinal pigment epithelial (RPE) cells [1]. SPHINX31 inhibited the growth of MLL-mutant AML cell lines with an IC50? >1 order of magnitude lower than for other AML lines. There was no impact of SPHINX31 on the clonogenic potential of normal mouse hematopoietic stem-progenitor cells (HSPCs). 1.5, 3, and 6?μM SPHINX31 did not affect the colony-forming ability of normal human cord blood CD34+ cells [2].
In vivo	In vivo, SPHINX31 (2 μg per eye) inhibits blood vessel growth and macrophage infiltration in the eyes of a mouse model of choroidal neovascularization [1]. Injection of 0.8?mg/kg SPHINX31 (i.p.) into DBA2J mice resulted in a concentration of 0.225?±?0.036? μM in plasma after 24?h. In xenotransplanted RAIL mice with MOLM-13, THP-1 cells or first passage patient-derived AMLs, SPHINX31 (0.8 or 2.0 mg/kg) led to a significant reduction in leukemic cell growth and a dose-dependent prolongation of survival of mice given MOLM-13, THP-1, and patient-derived MLL-X AMLs [2].
Cell Research	Cells were transduced with gRNA vectors or treated with SPHINX31 and stained at the indicated time points with anti-mouse CD11b PE/Cy5 and anti-human CD11b PE or anti-human CD13 FITC. Data were analyzed by using LSRFortessa and FlowJo. Apoptosis levels were measured in human and/or mouse AML cells transduced with dual gRNA vectors (against SRPK1 and 3' BCL2 enhancer) and/or treated with 1 or 3?μM SPHINX31 at indicated time points, by using Annexin V. Data were analyzed by using LSRFortessa instruments. Cell cycle stages were measured in human and/or mouse AML cells transduced with dual gRNA vectors against SRPK1 and/or treated with 1 or 3?μM SPHINX31 at indicated time points, using Propidium Iodide. Data were analyzed using LSRFortessa instruments [2].
Animal Research	For in vivo experiments, 6–10-week-old female Rosa26Cas9/+ mice were treated triweekly for two weeks with either vehicle or 2?mg/kg SPHINX31. Four weeks post-treatment, bone marrow cells from these mice were freshly extracted (as mentioned above) and blocked with anti-mouse CD16/32 and 10% mouse serum. For the

Animal Research	identification of LK/LSK, LT-HSC, myeloid and B-cell subpopulations, staining was performed using CD4 PE/Cy5, CD5 PE/Cy5, CD8a PE/Cy5, CD11b PE/Cy5, B220 PE/Cy5, TER-119 PE/Cy5, GR-1 PE/Cy5, SCA-1 Pacific Blue, CD150 PE/Cy7, CD34 FITC and CD117 APC-eFluor780. In each of the multi-colour flow cytometry experiments, we included the fluorescence minus one (FMO) controls. FMO controls provide a measure of spillover in a given channel. This allows for correct gating and selects only the stained cells in the experimental sample. Flow cytometry analysis was performed using a LSRFortessa instrument and resulting data were subsequently analyzed using FlowJo [2].

Solubility Information

Solubility	Ethanol: 10 mg/mL (19.7 mM),Sonication is recommended. H2O: Insoluble, DMSO: 18.85 mg/mL (37.14 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: 1.88 mg/mL (3.7 mM),Suspension. 10% DMSO+90% Saline: < 1.88 mg/mL (3.7 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. *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	1.9704 mL	9.852 mL	19.704 mL
5 mM	0.3941 mL	1.9704 mL	3.9408 mL
10 mM	0.197 mL	0.9852 mL	1.9704 mL
50 mM	0.0394 mL	0.197 mL	0.3941 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

Batson J, et al. Development of Potent, Selective SRPK1 Inhibitors as Potential Topical Therapeutics for Neovascular Eye Disease. ACS Chem Biol. 2017 Mar 17;12(3):825-832.

Tzelepis K, et al. SRPK1 maintains acute myeloid leukemia through effects on isoform usage of epigenetic regulators including BRD4. Nat Commun. 2018 Dec 19;9(1):5378.

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