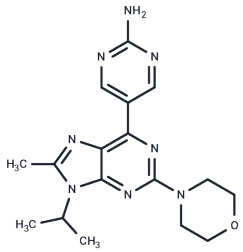
Data Sheet (Cat.No.T6103)

TargetMol

VS-5584

Chemical Properties



CAS No. : 1246560-33-7

Formula: C17H22N8O

Molecular Weight: 354.41

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	VS-5584 (SB2343) is a pan-PI3K/mTOR kinase inhibitor.
Targets(IC50)	mTOR,PI3K
In vitro	VS-5584 is an ATP-competitive inhibitor which selectively inhibits PI3K/mTOR signaling with equivalent low nanomolar potency against all human Class I PI3K isoforms and mTOR kinase. VS-5584 is approximately 10-fold selective for cancer stem cells with an EC50 of 15 nM in HMLE breast cancer cells. VS-5584 preferentially decreases CD44Hi/CD24Lo cells in an HMLER immortalized mammary cancer cell line. In SUM159 cells, VS-5584 effectively eliminates the cancer stem cell side population. [1] A large human cancer cell line panel screen (436 lines) reveals broad antiproliferative sensitivity and that cells harboring mutations in PI3KCA are generally more sensitive toward VS-5584 treatment. In the FLT3-ITD harboring MV4-11 cells, VS-5584 blocks pAkt (S473) and pAkt (T308) with IC50 of 12 and 13 nM, respectively. The IC50 of VS-5584 for pS6 (S240/244), pAkt (S473), and pAkt (T308) are 20, 23, and 15 nM, respectively. [2]
In vivo	In mice bearing triple negative breast cancer tumors, oral dosing of VS-5584 decreases tumor cancer stem cells and induces tumor regression in taxane-resistant models. [1] In a PTENnull human prostate PC3 xenograft model, treatment with VS-5584 leads to significant tumor growth inhibition (TGI) of 79% and 113% for 11 and 25 mg/kg, respectively. In a FLT3-ITD AML xenograft model, VS-5584 treatment induces dose-dependent inhibition of tumor growth (28% for 3.7 mg/kg and 76% for 11 mg/kg). [2]
Kinase Assay	In vitro mTOR kinase assays : The reaction mixture consisted of the following components in 10 µL assay buffer (50 mM Hepes pH 7.5, 10 mM MgCl 2, 3 mM MnCl 2, 1 mM EGTA, 2 mM DTT, 0.01%Tween-20): 0.10 µg/mL of in-house generated mTOR enzyme, 0.05 µM ULight-eIF4E-binding protein 1 (Thr37/46) peptide and 10 µM ATP. The mixture is incubated for 60 min at room temperature. 10 µL of Detection mixture consisted of 16 mM EDTA, 0.004 mM Eu-W1024-labeled Anti-Phospho-eIF4E-binding protein 1-(Thr37/46) antibody and 1X LANCE? Detection Buffer is then added and incubated for 60 min.
Cell Research	CellTiter-Glo assay(Only for Reference)

Solubility Information

Solubility	Ethanol: 3 mg/mL (8.46 mM),Sonication is recommended. DMSO: 66 mg/mL (186.22 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), (< 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 (5.64 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	2.8216 mL	14.108 mL	28.2159 mL
5 mM	0.5643 mL	2.8216 mL	5.6432 mL
10 mM	0.2822 mL	1.4108 mL	2.8216 mL
50 mM	0.0564 mL	0.2822 mL	0.5643 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

JA Pachter, et al. Molecular Targets and Cancer Therapeutics, 2012, abstract 405.
Hart S, et al. Mol Cancer Ther, 2013, 12(2), 151-161.