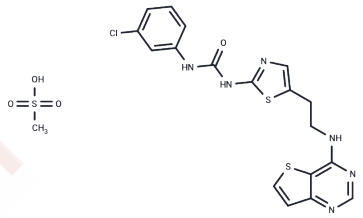
Data Sheet (Cat.No.T2617)

TargetMol

SNS-314 Mesylate

Chemical Properties



CAS No. : 1146618-41-8

Formula: C18H15ClN6OS2·CH4O3S

Molecular Weight: 527.04

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	SNS-314 Mesylate (SNS-314) is an effective and specific Aurora A/B/C inhibitor (IC50: 9/31/3 nM). It is less inhibition of Trk A/B, Fms, Flt4, c-Raf, Axl, and DDR2.
Targets(IC50)	Aurora Kinase
In vitro	In HCT116 colon xenograft models, SNS-314 exhibits significant and sustained anticancer effects. Additionally, in xenograft models of human breast cancer, prostate cancer, lung cancer (H1299 and Calu-6), ovarian cancer, and malignant melanoma, SNS-314 (170 mg/kg) demonstrates a tumor growth inhibition rate of 54-91%.
In vivo	Continuous treatment with SNS-314 in combination with gemcitabine, carboplatin, doxorubicin, fluorouracil, and SN-38 enhances antiproliferative effects. Synergistic effects are observed when SNS-314 is used together with gemcitabine, docetaxel, or vincristine. SNS-314 exhibits significant inhibitory activity against tumor cell lines (IC50: 1.8-24 nM), independent of the relative protein levels of Aurora-A or Aurora-B.
Kinase Assay	Aurora-A Kinase Assay: Humanized mouse Aurora A (amino acids 107-403) is expressed in E. coli as described previously. For IC50 assays, compounds are titrated three-fold in DMSO and diluted 12.5-fold into assay buffer (10 mM Tris HCl pH 7.2, 10 mM MgCl2, 0.05% NaN3, 0.01% Tween-20, and 0.1% BSA). Compounds are then diluted 4-fold into assay buffer containing Aurora A and FAM-PKAtide at final concentrations of 2 nM and 50 nM, respectively. The kinase reaction is initiated by adding ATP in assay buffer at a final concentration of 10 mM and incubated at 21 °C for 25 minutes. As a positive control, DMSO is added instead of compound and as a negative control assay buffer is added instead of Aurora A. Both control reactions are conducted in triplicate. To detect phosphorylated PKAtide, the kinase reaction is combined with Progressive Binding Solution (1:400 Progressive Binding Reagent, 1 × Buffer A, Molecular Devices) in a 1:3 ratio. The mixture is incubated for 30 minutes at 21 °C and the plate is scanned on an Analyst AD with excitation at 485 nm and emission at 530 nm. The percent relative enzymatic activity is calculated by normalizing the mP value for each well to the average positive control. Relative enzymatic activity values are plotted as a function of the logarithm of compound concentration and IC50 values are generated in GraphPad Prism software using a sigmoidal dose-response curve-fit. IC50's are calculated as the concentration of compound at which enzymatic activity i
Cell Research	Viability is measured using the CellTiter-Blue cell viability assay. Cells are treated as described above, although with a 5-day incubation period. Cytotoxicity is determined by

Cell Research	measuring intracellular ATP using the CellTiter-Glo Luminescence Cell Viability Assay. Cells are seeded in white 96-well tissue culture plates at a density of 1.5-2 × 103 cells/well, and a serial dilution of SNS-314 is dosed in combination with fixed concentrations of either docetaxel or vincristine for a total of 72 hours. Viability is determined as the ratio between the ATP in treated cells versus control cells. Apoptosis is measured using the caspase-Glo 3/7 system. Cells are plated in white 96-well plates as described above and treated first with SNS-314 for 24 hours, washed with 200 µL of 1× PBS, and fresh medium is added with the second agent for 24 hours.(Only for Reference)

Solubility Information

Solubility	DMSO: 50 mg/mL (94.87 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: 2 mg/mL (3.79 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	1.8974 mL	9.4869 mL	18.9739 mL
5 mM	0.3795 mL	1.8974 mL	3.7948 mL
10 mM	0.1897 mL	0.9487 mL	1.8974 mL
50 mM	0.0379 mL	0.1897 mL	0.3795 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

Oslob JD, et al. Bioorg Med Chem Lett, 2008, 18(17), 4880-4884.
VanderPorten EC, et al. Mol Cancer Ther, 2009, 8(4), 930-939.
Arbitrario JP, et al. Cancer Chemother Pharmacol, 2010, 65(4), 707-717.