SNS-314 mesylate

Cat. No.: HY-12003

CAS No.: 1146618-41-8

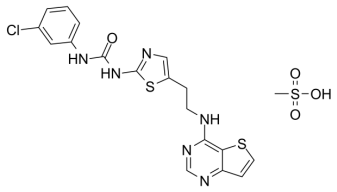
Molecular Formula: $C_{19}H_{19}ClN_6O_4S_3$

Molecular Weight: 527.04

Target: Aurora Kinase

Pathway: Cell Cycle/DNA Damage; Epigenetics

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 2 years; -20°C, 1 year (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 150 mg/mL (284.61 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	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

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 15 mg/mL (28.46 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (4.74 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.74 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SNS-314 mesylate is a potent and selective aurora kinase inhibitor with IC_{50}s of 9, 31, and 6 nM for aurora A, B and C, respectively[1].

IC_{50} & Target

Aurora A	Aurora B	Aurora C
9 nM (IC_{50})	31 nM (IC_{50})	6 nM (IC_{50})

In Vitro

SNS-314 blocks proliferation in a broad panel of tumor cell lines (HCT116, A2780, PC-3, HeLa, MDA-MB-231, H-1299, and HT29) with IC_{50} values ranging from 1.8 nM in A2780 ovarian cancer cells to 24 nM in HT29 colon cancer cells[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	In the HCT116 human colon cancer xenograft model, administration of 50 and 100 mg/kg SNS-314 leads to dose-dependent inhibition of histone H3 phosphorylation for at least 10 h. SNS-314 shows significant tumor growth inhibition in a dose dependent manner under a variety of dosing schedules including weekly, bi-weekly, and 5 days on/9 days off[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Kinase Assay [2]	A homogeneous time-resolved fluorescence (HTRF)-based biochemical IC_{50} assay is used to test for the kinase activity of the three isoforms of Aurora (A, B, and C) in the presence of SNS-314. A biotin-conjugated histone H3 peptide is used as substrate. Aurora-A kinase (7.5 nM) is assayed in 10 mM Tris–HCl pH 7.2, 10 mM $MgCl_2$, 0.1% BSA, 0.05% Tween 20, 1 mM DTT, 120 nM biotinylated peptide ARTKQTARKSTGGKAPRKQLA-GGK-biotin, 6 μM ATP (2×the Km for the enzyme) for 1 h at 25°C. The reaction is stopped with 200 mM EDTA. Aurora-B and Aurora-C are assayed at 5 nM enzyme concentration, 120 nM biotinylated peptide, and 300 lM ATP (29 the K_m for the enzymes) for 1 h at 25°C[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Cell Assay [2]	HCT116 cells are treated with various concentrations of SNS-314 for 96 hours. cells are incubated with BrdU for 2 h at 37°C. Cell proliferation activity is evaluated by chemiluminescence detection of BrdU incorporated in DNA[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2]	Mice: Tumor mice are treated with vehicle or SNS-314. Animals are weighed, monitored for signs or symptoms of toxic effects, and measured for tumor volumes twice weekly until an end point is met[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Sci Transl Med. 2018 Jul 18;10(450):eaaq1093.
- Patent. US20180263995A1.

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REFERENCES

[1]. Oslob JD, et al. Discovery of a potent and selective aurora kinase inhibitor. Bioorg Med Chem Lett. 2008 Sep 1;18(17):4880-4.

[2]. Arbitrario JP, et al. SNS-314, a pan-Aurora kinase inhibitor, shows potent anti-tumor activity and dosing flexibility in vivo. Cancer Chemother Pharmacol. 2010 Mar;65(4):707-17.

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