SU9516

Cat. No.: HY-18629

CAS No.: 377090-84-1

Molecular Formula: $C_{13}H_{11}N_3O_2$

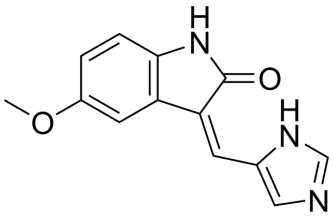
Molecular Weight: 241.25

Target: CDK; Autophagy; Apoptosis

Pathway: Cell Cycle/DNA Damage; Autophagy; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (414.51 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	4.1451 mL	20.7254 mL	41.4508 mL
5 mM	0.8290 mL	4.1451 mL	8.2902 mL
10 mM	0.4145 mL	2.0725 mL	4.1451 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 3.25 mg/mL (13.47 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3.25 mg/mL (13.47 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SU9516 is a potent CDK2 inhibitor, with an IC_{50} of 22 nM, and also shows inhibitory effects on CDK1 and CDK4, with IC_{50}s of 40, 200 nM, respectively.

IC_{50} & Target

CDK2	CDK1	CDK4	PDGFr
22 nM (IC_{50})	40 nM (IC_{50})	200 nM (IC_{50})	18000 nM (IC_{50})

In Vitro

SU9516 shows slight activities against PKC, p38, PDGFr and EGFR, with IC_{50} of >10, >10, 18, and >100 μM. SU9516 (5 μM) decreases cdk2-specific Phosphorylation of pRB and inhibits cell cycle progression in RKO cells. SU9516 (5 μM) also induces apoptosis in RKO and SW480 Cells[1]. SU9516 (5 μM) results in enhanced pRb/E2F complex formation in HT-29 cells. SU9516

enhances presence of E2F species in multiprotein complexes[2]. SU9516 (5 μM) rapidly induces cytochrome crelease, Bax mitochondrial translocation, and apoptosis in association with pronounced down-regulation of the antiapoptotic protein Mcl-1. SU9516 causes down-regulation of Mcl-1 mRNA levels in human leukemia cells. Furthermore, SU9516 treatment results in a marked increase in reactive oxygen species production[3].

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

PROTOCOL

Kinase Assay [1]

Kinase assays are performed in 96-well polypropylene plates. Each reaction contains 2 μg of histone H1 at a final concentration of 10 μM [-^{33}P]ATP (0.2 μCi/well), 10 mM $MgCl_2$,1mM DTT, 0.01% Triton X-100, and 10% glycerol in a 40 μL volume. The reaction is initiated with the addition of 20 μL enzyme (6 ng cdk2/well resulting in a final concentration of 1.6 nM), which is previously diluted 1:50-1:200 in the same buffer, and allowed to proceed for 1 h at room temperature. Reaction is stopped by the addition of 0.01 mL 10% phosphoric acid, and 25 μL of reaction mixture is transferred to P30 phosphocellulose filter mat paper. The filter mat is washed three times with 1.0% phosphoric acid, air dried, and then counted for radioactivity in a liquid scintillation counter.

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

Cell Assay [1]

RKO cells and SW480 cells are seeded in replicates (n = 6) in 96-well plates at 1×10^4 cells/well and allowed to attach overnight. SU9516 is added in concentrations from 0.05 μM to 50.00 μM for 24 h, the cells are then washed twice with PBS, and cells are replenished with complete media. The cells are fixed at 0, 4, and 7 days post-drug removal and assayed for protein levels using a modified SRB cytotoxicity assay. The cells are fixed in 10% trichloroacetic acid for 1 h, washed in distilled H_2O, and stained in 0.4% SRB/acetic acid for 30 min. The cells are then washed in 0.1% acetic acid, solubilized in 10 mM Tris (pH 9), and analyzed on a Bio-Rad 360 microplate reader at 595 nm. All experiments are repeated at least three times.

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

CUSTOMER VALIDATION

- Cell Death Differ. 2021 Feb;28(2):799-813.
- J Exp Clin Cancer Res. 2018 Feb 27;37(1):40.
- J Biosci Bioeng. 2020 Jul;130(1):98-105.
- bioRxiv. 2020 Feb.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Lane ME, et al. A novel cdk2-selective inhibitor, SU9516, induces apoptosis in colon carcinoma cells. Cancer Res. 2001 Aug 15;61(16):6170-7.

[2]. Yu B, et al. SU9516, a cyclin-dependent kinase 2 inhibitor, promotes accumulation of high molecular weight E2F complexes in human colon carcinoma cells. Biochem Pharmacol. 2002 Oct 1;64(7):1091-100.

[3]. Gao N, et al. The three-substituted indolinone cyclin-dependent kinase 2 inhibitor 3-[1-(3H-imidazol-4-yl)-meth-(Z)-ylidene]-5-methoxy-1,3-dihydro-indol-2-one (SU9516) kills human leukemia cells via down-regulation of Mcl-1 through a transcriptional mechanism. Mol Pharmacol. 2006 Aug;70(2):645-55.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA