NSC 95397

Cat. No.: HY-108543

CAS No.: 93718-83-3

Molecular Formula: $C_{14}H_{14}O_4S_2$

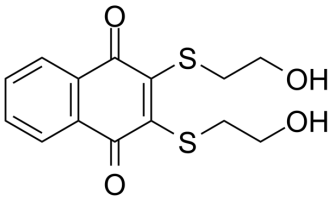
Molecular Weight: 310

Target: Phosphatase; Apoptosis

Pathway: Metabolic Enzyme/Protease; Apoptosis

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (322.58 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.2258 mL	16.1290 mL	32.2581 mL
	5 mM	0.6452 mL	3.2258 mL	6.4516 mL
	10 mM	0.3226 mL	1.6129 mL	3.2258 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: ≥ 10 mg/mL (32.26 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 10 mg/mL (32.26 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NSC 95397 is a potent, selective Cdc25 dual specificity phosphatase inhibitor (K_i=32 nM (Cdc25A), 96 nM (Cdc25B), 40 nM (Cdc25C); IC_{50}=22.3 nM (human Cdc25A), 56.9 nM (human Cdc25C), 125 nM (Cdc25B))[1]. NSC 95397 inhibits mitogen-activated protein kinase phosphatase-1 (MKP-1) and suppresses proliferation and induces apoptosis in colon cancer cells through MKP-1 and ERK1/2 pathway[2].

IC_{50} & Target

Ki: 32 nM (Cdc25A), 96 nM (Cdc25B), 40 nM (Cdc25C)[1]
IC50: 22.3 nM (human Cdc25A) , 56.9 nM (human Cdc25C), 125 nM (Cdc25B)[1]

In Vitro

NSC 95397 (0, 10, and 20 μM; 24 hour) decreases the cell viability of three colon cancer cell lines SW480, SW620, and DLD-1 in a concentration-dependent manner[2].

NSC 95397(10 μM; 24 hour) upregulates p21 while downregulates CDK4 and CDK6 were d in all three colon cancer cell lines SW480, SW620, and DLD-1 cells[2].
NSC 95397 (10 μM; 24 hour) reduces the phosphorylation of retinoblastoma protein (Rb) on Ser795 and Ser807/811[2].
NSC 95397 (20 μM; 24 hours) significantly increases cleaved caspase-9, -3, -7 and PARP levels[2].
NSC 95397 (10 μM; 6 hours) enhances the phosphorylation of its downstream ERK1/2 at Thr202/Tyr 204[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	Human colon cancer cell lines, SW480, SW620, and DLD-1
Concentration:	0, 10, and 20 μM
Incubation Time:	24 hours
Result:	The IC_{50} values of NSC 95397 for the cell growth of SW480, SW620, and DLD-1 cells were 9.9, 14.1 and 18.6 μM, respectively.

Western Blot Analysis[2]

Cell Line:	SW480, SW620, and DLD-1 cells
Concentration:	10 μM
Incubation Time:	24 hours
Result:	p21 was upregulated while CDK4 and CDK6 were downregulated. Rduced the phosphorylation of Rb on Ser795 and Ser807/811

CUSTOMER VALIDATION

- Phytomedicine. 2021 Nov;92:153743.
- Bioengineered. 2022 May;13(5):13089-13107.
- Cell Physiol Biochem. 2016;40(3-4):597-607.

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REFERENCES

[1]. Lazo JS, et al. Identification of a potent and selective pharmacophore for Cdc25 dual specificity phosphatase inhibitors. Mol Pharmacol. 2002 Apr;61(4):720-8.

[2]. Dubey NK, et al. NSC 95397 Suppresses Proliferation and Induces Apoptosis in Colon Cancer Cells through MKP-1 and the ERK1/2 Pathway. Int J Mol Sci. 2018 May 31;19(6). pii: E1625.

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