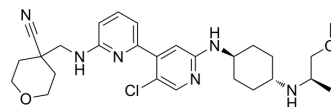


NVP-2

Cat. No.:	HY-12214A		
CAS No.:	1263373-43-8		
Molecular Formula:	C ₂₇ H ₃₇ ClN ₆ O ₂		
Molecular Weight:	513		
Target:	CDK; Apoptosis		
Pathway:	Cell Cycle/DNA Damage; 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 (194.93 mM)
 * "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	1.9493 mL	9.7466 mL	19.4932 mL
	5 mM	0.3899 mL	1.9493 mL	3.8986 mL
	10 mM	0.1949 mL	0.9747 mL	1.9493 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (4.87 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (4.87 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (4.87 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NVP-2 is a potent and selective ATP-competitive cyclin dependent kinase 9 (CDK9) probe, inhibits CDK9/CycT activity with an IC₅₀ of 0.514 nM. NVP-2 displays inhibitory effects on CDK1/CycB, CDK2/CycA and CDK16/CycY kinases with IC₅₀ values of 0.584 μM, 0.706 μM, and 0.605 μM, respectively. NVP-2 induces cell apoptosis.^[1]

IC₅₀ & Target

CDK9
 0.5 nM (IC₅₀)

In Vitro

NVP-2 has an anti-proliferation of leukemia cells, inhibits KOPT-K1, Jurkat, P12-ICHIKAWA, DU.528, MOLT 16, HSB-2, PF-382, SKW-3, SUP-T11, DND-41 and HPB-ALL cells with IC₅₀ values of 0.1688 μM, 0.1233 μM, 0.5736 μM, 0.1575 μM, 0.1620 μM, 0.1585 μM, 0.1808 μM, 0.2589 μM, 0.0918 μM and 0.3023 μM, respectively^[1].

?NVP-2 (250 nM-1 μM; 6 hours) engages CDK9 in wildtype and ?CRBN^{2/2}?MOLT4 cells at all concentrations, while CDK2 and CDK7 are unaffected^[1].

?NVP-2 (0-10 nM; 72 hours) exhibits CRBN-dependent anti-proliferative and pro-apoptotic effects in MOLT4 cells, displays an IC₅₀ value of 9 nM^[1].

?NVP-2 (250 nM; 24 hours) induces cell apoptosis in MOLT4 cells, upregulates caspase-3 and γH2A.X expression. However, while the compound washout significantly reduces the degree of apoptosis induced by NVP-2^[1].

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

Cell Viability Assay^[1]

Cell Line:	Leukemia cell lines
Concentration:	0.1233 μM-0.5736 μM
Incubation Time:	72 hours
Result:	Inhibited Leukemia cell lines viability.

Western Blot Analysis^[1]

Cell Line:	Wildtype and CRBN ^{-/-} MOLT4 cells
Concentration:	1 μM; 500 nM; 250 nM
Incubation Time:	6 hours
Result:	Degrade CDK9 sub-stoichiometrically at all concentrations.

Apoptosis Analysis^[1]

Cell Line:	Wildtype and CRBN ^{-/-} MOLT4 cells
Concentration:	250 nM
Incubation Time:	24 hours
Result:	Induced cell apoptosis in cells and wash outed the compound relieved NVP-2-induced cell apoptosis.

Cell Proliferation Assay^[1]

Cell Line:	MOLT4 cells
Concentration:	0-10 nM
Incubation Time:	72 hours
Result:	Exhibited anti-proliferative effects in MOLT4 cells.

CUSTOMER VALIDATION

- Cell. 2018 Sep 20;175(1):171-185.e25.
- Cancer Cell. 2019 May 13;35(5):752-766.e9.

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- Nat Commun. 2021 Nov 16;12(1):6607.
 - Nat Commun. 2019 Oct 18;10(1):4741.
 - Mol Cell. 2021 Aug 31;S1097-2765(21)00646-8.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Winter GE, et al. BET Bromodomain Proteins Function as Master Transcription Elongation Factors Independent of CDK9 Recruitment. Mol Cell. 2017 Jul 6;67(1):5-18.e19.

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

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