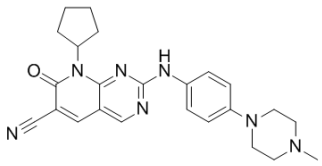
ON123300

Cat. No.:	HY-12624
CAS No.:	1357470-29-1
Molecular Formula:	$C_{24}H_{27}N_7O$
Molecular Weight:	429.52
Target:	CDK
Pathway:	Cell Cycle/DNA Damage
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 16.67 mg/mL (38.81 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3282 mL	11.6409 mL	23.2818 mL
	5 mM	0.4656 mL	2.3282 mL	4.6564 mL
	10 mM	0.2328 mL	1.1641 mL	2.3282 mL

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

BIOLOGICAL ACTIVITY

Description

ON123300 is a potent inhibitor of CDK4, with an IC50 of 3.8 nM, with little inhibitory activity against CDKs 1,2,5 and 8.IC50 value: 3.8 nM [1]Target: CDK4in vitro: ON123300 is a novel kinase inhibitor, inhibits CDK4/6 and PI3K-δ and exhibits potent activity against mantle cell lymphomas (MCLs). [1] ON123300 is a low molecular weight multi-kinase inhibitor identified through a series of screens that supported further analyses for brain tumor chemotherapy. Biochemical assays indicated ON123300 was a strong inhibitor of Ark5 and CDK4 as well as growth factor receptor tyrosine kinases such as Beta-type platelet-derived growth factor receptor [PDGFRβ]. ON123300 inhibited U87 glioma cell proliferation with an IC50 = 3.4 ± 0.1 μM and reduced phosphorylation of Akt, yet it also unexpectedly induced Erk activation; both in a dose- and time-dependent manner that subsequently was attributed to relieving Akt-mediated C-Raf S259 inactivation and activating a p70S6K initiated PI3K negative feedback loop. [3]

IC_{50} & Target				
	Cdk4/cyclin D1 3.87 nM (IC_{50})	CDK6/cyclinD1 9.82 nM (IC_{50})	ARK5 4.95 nM (IC_{50})	FGFR1 26 nM (IC_{50})
	PDGFRβ 26 nM (IC_{50})	PI3K-δ 144 nM (IC_{50})		

CUSTOMER VALIDATION

- Autophagy. 2020 May 23;1-22.
- Department of Biochemistry. 2020 Oct.

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REFERENCES

[1]. Divakar SK, et al. Dual inhibition of CDK4/Rb and PI3K/AKT/mTOR pathways by ON123300 induces synthetic lethality in mantle cell lymphomas. Leukemia. 2016 Jan;30(1):86-93.

[2]. Perumal D, et al. Dual Targeting of CDK4 and ARK5 Using a Novel Kinase Inhibitor ON123300 Exerts Potent Anticancer Activity against Multiple Myeloma. Cancer Res. 2016 Mar 1;76(5):1225-36.

[3]. Zhang X, et al. Preclinical pharmacological evaluation of a novel multiple kinase inhibitor, ON123300, in brain tumor models. Mol Cancer Ther. 2014 May;13(5):1105-16.

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