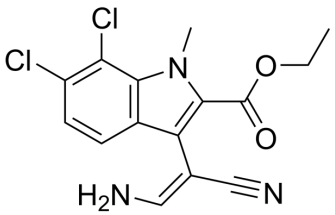
KH-CB19

Cat. No.:	HY-12828
CAS No.:	1354037-26-5
Molecular Formula:	$C_{15}H_{13}Cl_2N_3O_2$
Molecular Weight:	338.19
Target:	CDK
Pathway:	Cell Cycle/DNA Damage
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 : ≥ 50 mg/mL (147.85 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9569 mL	14.7846 mL	29.5692 mL
	5 mM	0.5914 mL	2.9569 mL	5.9138 mL
	10 mM	0.2957 mL	1.4785 mL	2.9569 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: ≥ 2.5 mg/mL (7.39 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.39 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

KH-CB19 is a potent CLK (cdc2-like kinase) inhibitor (CLK1 IC_{50}=19.7 nM; CLK3 IC_{50}=530 nM). KH-CB19 shows antiviral activity and inhibits influenza virus replication (IC_{50}=13.6 μM)[1][2].

IC_{50} & Target

CLK1	CLK3	DYRK1A
19.7 nM (IC_{50})	530 nM (IC_{50})	55.2 nM (IC_{50})

In Vitro

KH-CB19 (10 μM; 1 h) shows CLK inhibition on SR protein phosphorylation in human microvascular endothelial cells[1].
KH-CB19 (50 μM; 6 h) inhibits the disruption by CLK4 in A549 cells[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	Human microvascular endothelial cells (HMEC-1)
Concentration:	10 μM
Incubation Time:	1 hour
Result:	Led to a reduced phosphorylation of SRp75, SRp55, and SRp20 compared with non TNF-α-stimulated controls. Led to a reduction of the TNF-α-induced increase in phosphorylation of all analyzed SR proteins compared with TNF-α-stimulated controls.

REFERENCES

[1]. Fedorov O, et al. Specific CLK inhibitors from a novel chemotype for regulation of alternative splicing. Chem Biol. 2011 Jan 28;18(1):67-76.

[2]. Artarini A, et al. Regulation of influenza A virus mRNA splicing by CLK1. Antiviral Res. 2019 Aug;168:187-196.

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