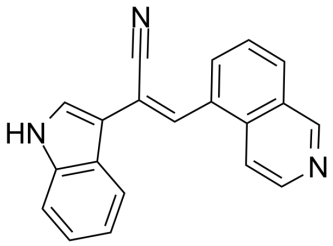
PIP4K-IN-a131

Cat. No.:	HY-136310
CAS No.:	2055405-95-1
Molecular Formula:	$C_{20}H_{13}N_3$
Molecular Weight:	295.34
Target:	Others
Pathway:	Others
Storage:	Powder -20°C 3 years 4°C 2 years * The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro

DMSO : 62.5 mg/mL (211.62 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.3859 mL	16.9296 mL	33.8593 mL
	5 mM	0.6772 mL	3.3859 mL	6.7719 mL
	10 mM	0.3386 mL	1.6930 mL	3.3859 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: 2.08 mg/mL (7.04 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.08 mg/mL (7.04 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

PIP4K-IN-a131 is PIP4K lipid kinases inhibitor, with IC_{50}s of 1.9 μM and 0.6 μM for purified PIP4K2A and PIP4Ks, respectively. PIP4K-IN-a131 exhibits cancer-selective lethality via dual blockade of the lipid kinase PIP4Ks and mitotic pathways[1].

IC_{50} & Target

IC50: 1.9 μM (PIP4K2A), 0.6 μM (PIP4Ks)[1]

In Vitro

PIP4K-IN-a131 (0-100 μM; 72 hours) is a potent antiproliferative agent with a clear selectivity toward cancer cells killing[1].
PIP4K-IN-a131 eliminates cancer cells via a dual-inhibitory mechanism[1].
PIP4K-IN-a131 causes inhibition of the PI3K/Akt/mTOR pathway only in normal BJ cells, but not in transformed counterparts [1].
Inhibition of PIP4Ks by PIP4K-IN-a131 arrests normal cells at the G1/S phase of the cell cycle by suppressing the PI3K/Akt/mTOR signaling pathway via transcriptional upregulation of PIK3IP1[1].

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

Cell Proliferation Assay[1]

Cell Line:	Normal and transformed BJ cells
Concentration:	0-100 μM (MTT assay)
Incubation Time:	72 hours
Result:	Selective killed cancer cells.

RT-PCR[1]

Cell Line:	BJ cells
Concentration:	5 μM
Incubation Time:	24 hours
Result:	Induced the upregulation of PIK3IP1 mRNA levels.

REFERENCES

[1]. Mayumi Kitagawa, et al. Dual Blockade of the Lipid Kinase PIP4Ks and Mitotic Pathways Leads to Cancer-Selective Lethality. Nat Commun. 2017 Dec 19;8(1):2200.

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