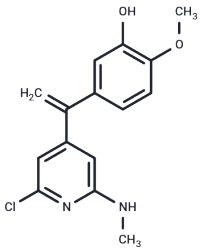
Data Sheet (Cat.No.T60600)

TargetMol
YOUR TARGET MOLECULES

Tubulin polymerization-IN-14

Chemical Properties



CAS No. : 2417134-05-3

Formula: C15H15ClN2O2

Molecular Weight: 290.74

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Tubulin polymerization-IN-14 (Compound 20a) is a tubulin polymerization inhibitor (IC 50 = 3.15 μM) that exhibits potent anti-vascular and anticancer activities including cancer cell apoptosis [1].
In vitro	Tubulin polymerization-IN-14 (Compound 20a) targets the colchicine binding site on tubulin to inhibit cancer cell growth at concentrations of 0-1 μM over 72 hours, as per studies. At lower concentrations (5-20 nM) over 48 hours, this compound halts the cell cycle in the G2/M phase and significantly triggers apoptosis in K562 cells in a dose-dependent manner. It also leads to mitochondrial membrane potential collapse and mitochondrial dysfunction. Furthermore, at similar concentrations (5-20 nM) but over a shorter period (24 hours), Tubulin polymerization-IN-14 notably reduces wound closure and the formation of capillary-like structures in HUVECs, evidencing its potential to inhibit angiogenesis, again in a concentration-dependent fashion. Additional assays underscore its potency: an anti-proliferative effect with an IC 50 of 0.01 ± 0.001 μM against K562 cells, cytotoxic activities against a panel of cell lines including HepG2, HCT-8, MDA-MB-231, and HFL-1 with IC 50 values ranging from 0.019 to 0.118 μM. Cell cycle analysis revealed a concentration-dependent increase in G2/M phase arrest, and apoptosis analysis showed a significant increase in apoptotic cells after treatment, indicating its effectiveness in inducing programmed cell death. Lastly, cell migration assays in HUVECs demonstrated a significant dose-dependent decrease in cell migration, highlighting its role in inhibiting cellular movements associated with metastasis.
In vivo	Tubulin polymerization-IN-14 (Compound 20a), administered intravenously at dosages of 15 and 30 mg/kg daily for 21 days, exhibited a marked and dose-dependent anti-tumor effect in a liver tumor allograft mouse model (Five-week-old male ICR mice), demonstrating significant tumor weight reduction by 68.7% at the 30 mg/kg dosage without evident toxicity or significant body weight loss [1].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.4395 mL	17.1975 mL	34.395 mL
5 mM	0.6879 mL	3.4395 mL	6.879 mL
10 mM	0.3439 mL	1.7197 mL	3.4395 mL
50 mM	0.0688 mL	0.3439 mL	0.6879 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.