Data Sheet (Cat.No.T61532)

TargetMol

Tubulin polymerization-IN-6

Chemical Properties

CAS No. :

Formula: C19H21NO7

Molecular Weight: 375.37

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Tubulin polymerization-IN-6 (compound 5f) is a potent tubulin polymerization inhibitor with an IC50 of 1.09 μM. It inhibits cell migration and tube formation, exhibits anti-angiogenic properties, and effectively hinders tumor growth in HT29 xenograft Balb/c nude mice [1].
Targets(IC50)	Apoptosis,Others,Reactive Oxygen Species,Microtubule Associated
In vitro	Tubulin polymerization-IN-6 (compound 5f), tested across various concentrations and periods, exhibits significant anti-cancer activity through broad-spectrum anti-proliferative effects on several cancer cell lines (MCF-7, MDA-MB-231, A549, Hela, and HT29), including drug-resistant strains (MCF-7/TxR and A549/TxR). This compound inhibits tumor cell colony formation, disrupts cell migration, and impedes angiogenesis in HUVEC cells by competing with colchicine for tubulin binding, thus inhibiting tubulin polymerization. Additionally, Tubulin polymerization-IN-6 induces cell cycle arrest and apoptosis in HT29 cells by modulating relevant proteins, decreasing mitochondrial membrane potential, and increasing reactive oxygen species (ROS) production. Detailed analyses, including Western Blot and Immunofluorescence, show dose-dependent impacts on tubulin dynamics and regulation of proteins crucial for cell cycle progression and apoptosis, underscoring the compound's potential as a multi-faceted anti-cancer agent.
In vivo	Tubulin polymerization-IN-6, also referred to as compound 5f, demonstrated a dose-dependent inhibitory effect on tumor growth in HT29 xenograft Balb/c nude mice when administered intraperitoneally at dosages ranging from 0 to 10 mg/kg once every two days for three weeks, achieving a tumor weight reduction of 75.5% at the highest dosage. Additionally, a single intravenous dose of 10 mg/kg in SD rats revealed significantly improved pharmacokinetic properties, including an eight-fold increase in half-life and a two-fold enhancement in the area under the curve (AUC), indicating better systemic exposure and potential effectiveness of Tubulin polymerization-IN-6 against cancerous tumors.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.664 mL	13.3202 mL	26.6404 mL
5 mM	0.5328 mL	2.664 mL	5.3281 mL
10 mM	0.2664 mL	1.332 mL	2.664 mL
50 mM	0.0533 mL	0.2664 mL	0.5328 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

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