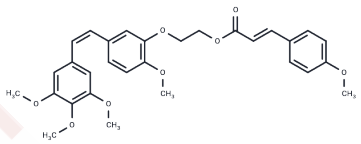
Data Sheet (Cat.No.T211363)

TargetMol

Tubulin polymerization-IN-82

Chemical Properties



CAS No. : 3067075-77-5

Formula: C30H32O8

Molecular Weight: 520.57

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-82 is a tubulin inhibitor that effectively hinders cell migration and invasion. It induces apoptosis (cellular self-destruction) through pathways mediated by mitochondrial and endoplasmic reticulum stress. Tubulin polymerization-IN-82 exhibits antitumor activity against drug-resistant cancer cells and suppresses tumor growth, making it suitable for liver cancer research.
Targets(IC50)	MMP,Bcl-2 Family,Caspase,Microtubule Associated,ROS
In vitro	Tubulin polymerization-IN-82 (Compound 9n) demonstrates antiproliferative activity against various cell lines at concentrations of 0.039-2.5 μM over 72 hours, with IC50 values of 0.09 μM for HepG-2, 0.25 μM for NCI-H460, 0.20 μM for HCT-116, and 0.18 μM for SK-OV-3. In resistant cells, it shows antiproliferative effects with IC50 values of 0.29 μM for A549/CDDP, 0.45 μM for A549/Paclitaxel, and 0.51 μM for MCF-7/DOX. Tubulin polymerization-IN-82 inhibits tubulin polymerization of purified tubulin at concentrations of 1.25-20 μM over 5-65 minutes, with an IC50 of 3.56 μM. It induces apoptosis in HepG-2 cells by disrupting the microtubule network through mitochondrial and endoplasmic reticulum stress pathways at 1.25 μM and 2.5 μM within 24 hours. The compound also causes G2/M phase cell cycle arrest in a concentration-dependent manner, reduces matrix metalloproteinase (MMP) levels, and induces reactive oxygen species (ROS) generation in HepG-2 cells. Additionally, it increases intracellular Ca2+ levels and upregulates the expression of p-PERK, p-eIF2α, and CHOP. Tubulin polymerization-IN-82 is hydrolyzed by esterases after 4 hours of carboxylesterase action and remains stable in PBS (pH = 7.4) and DMEM with 1% DMF over 24, 48, or 72 hours.
In vivo	Compound 9n, also known as Tubulin polymerization-IN-82, administered intravenously at doses of 15 or 30 mg/kg over a period of 21 days, effectively inhibits tumor growth in the HepG-2 xenograft model.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.921 mL	9.6049 mL	19.2097 mL
5 mM	0.3842 mL	1.921 mL	3.8419 mL
10 mM	0.1921 mL	0.9605 mL	1.921 mL
50 mM	0.0384 mL	0.1921 mL	0.3842 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.