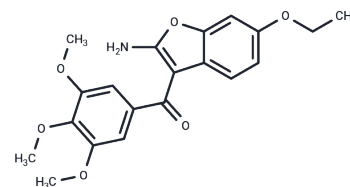


Tubulin polymerization-IN-13

Chemical Properties

CAS No. : 2426665-56-5
Formula: C₂₀H₂₁NO₆
Molecular Weight: 371.38
Appearance: no data available
Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year



Biological Description

Description	Tubulin polymerization-IN-13 (Compound 4f) is a potent inhibitor of tubulin polymerization, with an IC ₅₀ value of 0.37 μ M. It displays significant anti-proliferative effects against cancer cells, inducing apoptosis and exhibiting potential antivascular activity [1].
In vitro	Tubulin Polymerization-IN-13, at concentrations ranging from 0.005 to 2.8 nM, effectively inhibits the proliferation of tumor cells, while exhibiting non-toxic effects on non-tumor cells at concentrations between 8.7 and 10 μ M. Furthermore, treatment with Tubulin Polymerization-IN-13 at doses of 1 to 50 nM for 24 hours leads to cell cycle arrest at the G2/M phase, and a concentration of 10 nM induces apoptosis within 24 and 48 hours of treatment. This compound also causes alterations in the microtubule network at doses between 10 and 100 nM after 24 hours of exposure. In depth analysis reveals IC ₅₀ values of 2.8 nM, 2.1 nM, 0.005 nM, 2.7 nM, 0.31 nM, and 0.28 nM for the cell lines HeLa, HT-29, Daoy, HL-60, SEM, and Jurkat, respectively, indicating its efficacy in halting cell proliferation. Additionally, the compound has shown a GI ₅₀ of 8.7 μ M in quiescent lymphocytes, demonstrating its safety in non-cancerous cells. Detailed cell cycle, apoptosis, and immunofluorescence analyses on HeLa cells underline Tubulin Polymerization-IN-13's mechanism of action, which includes G2/M arrest, activation of caspase-9, cleavage of PARP, phosphorylation of Bcl-2, downregulation of Mcl-1, and disorganization of microtubules, further establishing its potential therapeutic benefits.
In vivo	Tubulin polymerization-IN-13, administered through intraperitoneal injection at doses of 15 or 5 mg/kg once every other day for a total of four administrations, significantly diminished tumor growth in a dose-dependent manner within an orthotopic murine model of mammary carcinoma (E0771 cell line) implanted in seven-week-old female C57BL/6 mice. The treatment resulted in a 45.7% reduction in tumor mass at 15 mg/kg and a 16.9% reduction at 5 mg/kg, without any observed toxicity or decrease in body weight of the animals [1].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6927 mL	13.4633 mL	26.9266 mL
5 mM	0.5385 mL	2.6927 mL	5.3853 mL
10 mM	0.2693 mL	1.3463 mL	2.6927 mL
50 mM	0.0539 mL	0.2693 mL	0.5385 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.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only· Not for Human or Veterinary or Therapeutic Use

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