Tubulin inhibitor 11

Cat. No.: HY-152156

CAS No.: 2366260-33-3

Molecular Formula: $C_{22}H_{23}N_3O_3S$

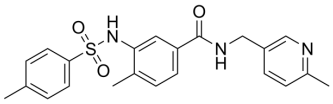
Molecular Weight: 409.5

Target: Microtubule/Tubulin; Apoptosis

Pathway: Cell Cycle/DNA Damage; Cytoskeleton; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (244.20 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4420 mL	12.2100 mL	24.4200 mL
5 mM	0.4884 mL	2.4420 mL	4.8840 mL
10 mM	0.2442 mL	1.2210 mL	2.4420 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: ≥ 2.5 mg/mL (6.11 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.11 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.11 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tubulin inhibitor 11 is a potent and orally active tubulin inhibitor. Tubulin inhibitor 11 targets the Colchicine binding site on tubulin, inhibits tubulin polymerization, promotes mitotic blockade and apoptosis[1].

In Vitro

Tubulin inhibitor 11 (Compound 48; 0.03-0.1 μM; 12 hours) causes cell cycle arrest at G2/M phase. Tubulin inhibitor 11 reduces cdc2 phosphorylation and increases cyclin B1 and phosphorylation of histone H3 at Ser10 in cells[1].
Tubulin inhibitor 11 (Compound 48; 0.03-0.3 μM; 48 hours) causes cancer cell apoptosis[1].
Tubulin inhibitor 11 (Compound 48) demonstrates favorable antiproliferative activities in DU145 cells with an IC_{50} of 8 nM[1].

Tubulin inhibitor 11 (Compound 48; 0.03-0.3 μM) significantly reduces the expression levels of acetyl-α-tubulin and α-tubulin in a dose-dependent manner[1].

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

Cell Cycle Analysis[1]

Cell Line:	DU145 cells
Concentration:	0.01 μM, 0.03 μM, and 0.1 μM
Incubation Time:	12 hours
Result:	Caused cell cycle arrest at G2/M phase.

Apoptosis Analysis[1]

Cell Line:	DU145 cells
Concentration:	0.03 μM, 0.1 μM, and 0.3 μM
Incubation Time:	48 hours
Result:	Induced cancer cell apoptosis.

Western Blot Analysis[1]

Cell Line:	DU145 cells
Concentration:	0.01 μM, 0.03 μM, and 0.1 μM
Incubation Time:	12 hours
Result:	Reduced cdc2 phosphorylation and increased cyclin B1 and phosphorylation of histone H3 at Ser10 in cells.

In Vivo

Tubulin inhibitor 11 (Compound 48; 5-10 mg/kg; p.o; once daily) shows robust in vivo antitumor efficacies[1].

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

Animal Model:	Male athymic BALB/c nude mice (18-20 g) injected with DU145, NCI-H1299 or A549R cells[1]
Dosage:	5 mg/kg, 10 mg/kg
Administration:	p.o; once daily
Result:	Effectively suppressed tumor growth.

REFERENCES

[1]. Songwen Lin, et al. Optimization of Benzamide Derivatives as Potent and Orally Active Tubulin Inhibitors Targeting the Colchicine Binding Site. J Med Chem. 2022 Dec 22;65(24):16372-16391.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA