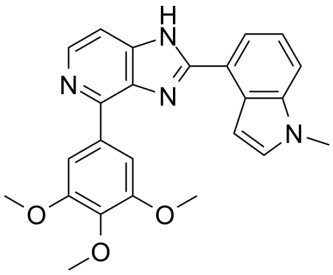
Tubulin inhibitor 33

Cat. No.:	HY-149856
CAS No.:	2944462-67-1
Molecular Formula:	$C_{24}H_{22}N_4O_3$
Molecular Weight:	414.46
Target:	Microtubule/Tubulin; Apoptosis
Pathway:	Cell Cycle/DNA Damage; Cytoskeleton; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Tubulin inhibitor 33, a tubulin polymerization inhibitor, inhibits tubulin polymerization in a dose-dependent manner with an IC_{50} of 9.05 μM. Tubulin inhibitor 33 has antitumor effects and induces cell apoptosis that can be used for antitumor research[1].
IC_{50} & Target	IC50: 9.05 μM (tubulin)[1]

In Vitro

Tubulin inhibitor 33 (Compound 3a) (0-5 nM; 24-48 hours) inhibits the proliferation, antimigratory and colony formation and induces G2/M arrest and apoptosis in HepG-2 cells[1].
Tubulin inhibitor 33 (0-5 nM; 12 hours) effectively inhibits tubulin polymerization in HepG-2 cells and disrupts microtubule dynamics
[1].

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

Cell Proliferation Assay[1]

Cell Line:	MCF-7, HeLa, B16-F10, HepG-2 cells
Concentration:	0-5 nM
Incubation Time:	24-48 hours
Result:	Exhibited the antiproliferative activity against the growth of cancer cells with an average IC_{50} value of 4.5 nM. Suppressed the formation of HepG-2 colonies in a dose-dependent manner, with the colony-forming ability of HepG-2 cells being significantly suppressed. Exhibited the antimigratory effects against HepG-2 cells. Induced G2/M arrest and apoptosis in HepG-2 cells.

Immunofluorescence[1]

Cell Line:	HepG-2 cells
Concentration:	0-5 nM
Incubation Time:	12 hours

Result:	Effectively inhibited tubulin polymerization in vitro and disrupted microtubule dynamics.

In Vivo

Tubulin inhibitor 33 (Compound 3a) (5 mg/kg; i.p. everyday for 14 days) significantly inhibits melanoma tumor growth with tumor growth inhibition (TGI) of 62.96%[1].

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Animal Model:	B16-F10 melanoma model in C57 mice[1]
Dosage:	5 mg/kg
Administration:	Intraperitoneal injection (i.p.)
Result:	Significantly inhibited melanoma tumor growth with a TGI of 62.96%.

REFERENCES

[1]. Ren Y, et.al. X-ray Crystal Structure-Guided Discovery of Novel Indole Analogues as Colchicine-Binding Site Tubulin Inhibitors with Immune-Potentiating and Antitumor Effects against Melanoma. J Med Chem. 2023 May 25;66(10):6697-6714.

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