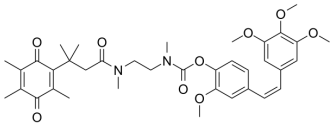
Tubulin polymerization-IN-28

Cat. No.:	HY-149021
CAS No.:	2481404-89-9
Molecular Formula:	$C_{37}H_{46}N_2O_9$
Molecular Weight:	662.77
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 polymerization-IN-28 (compound-4) is a microtubule protein polymerization inhibitor with highly selective anticancer activity. Tubulin polymerization-IN-28 can be activated by NQO1 and effectively release combretastatin A-4 to kill tumor cells. Tubulin polymerization-IN-28 can induce cell apoptosis and be used in anti-cancer research[1].

In Vitro

Tubulin polymerization-IN-28 (compound-4) (9-381 nM□48 hours)has a significant inhibitory effect on tumor cells[1].
Tubulin polymerization-IN-28 (compound-4) (10 nM□48 hours) inhibits microtubule assembly with anti-tumor activity[1].
Tubulin polymerization-IN-28 (compound-4) (10 nM□48 hours) causes G2/M phase arrest in cells[1].
Tubulin polymerization-IN-28 (compound-4) (10 nM□24 hours) leads to significant cell apoptosis[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assaysup>[1]

Cell Line:	NQO1-Overexpressing A549, HepG2; Hypoxia-exposed A549 (A549/Hyp), HepG2 (HepG2/Hyp) cells; Taxol-resistant A549 cells (A549/T)
Concentration:	9-381 nM
Incubation Time:	48 hours
Result:	Inhibited A549, HepG2, A549/Hyp, HepG2/Hyp, A549/T with IC_{50}values of 10 nM, 26 nM, 72 nM, 85 nM, 56 nM, 74 nM and 88 nM respectively.

Immunofluorescencesup>[1]

Cell Line:	HepG2
Concentration:	10 nM
Incubation Time:	48 hours
Result:	Showed that Tubulin polymerization-IN-28 converted to CA-4, thereby inhibiting microtubule assembly, in the presence of NQO1.

Cell Cycle Analysis[1]

Cell Line:	HepG2

Concentration:	0 nM、10 nM
Incubation Time:	48 hours
Result:	Resulted in an increase in the percentage of G2/M phase cells from 12.71% to 33.49%.

Apoptosis Analysis[1]

Cell Line:	HepG2
Concentration:	0 nM、10 nM
Incubation Time:	24 hours
Result:	Showed the apoptosis rate of cells increasing from 6.54% to 23.93%.

In Vivo

Tubulin polymerization-IN-28 (compound-4) (intraperitoneal injection, every day, 17days) exhibits good anti-cancer activity in HepG2 xenograft-bearing BALB/c mice model in vivo[1].

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

Animal Model:	HepG2 xenograft-bearing BALB/c mice[1]
Dosage:	20 mg/kg, 40 mg/kg
Administration:	Intraperitoneal injection; every day; 17days
Result:	Resulted in 47.49% reduction in tumor growth at a concentration of 20 mg/kg. Resulted in 54.87% reduction in tumor growth at a concentration of 40 mg/kg.

REFERENCES

[1]. Chong Zhang,et al. NQO1-selective activated prodrugs of combretastatin A-4: Synthesis and biological evaluation. Bioorg Chem. 2020 Oct;103:104200.

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