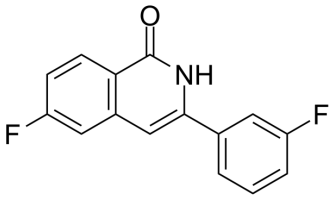
Tubulin inhibitor 14

Cat. No.:	HY-145820
CAS No.:	2767446-34-2
Molecular Formula:	$C_{15}H_9F_2NO$
Molecular Weight:	257.23
Target:	Apoptosis; Microtubule/Tubulin
Pathway:	Apoptosis; Cell Cycle/DNA Damage; Cytoskeleton
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Tubulin inhibitor 14 is a potent NQO2 (quinone oxidoreductase 2) inhibitor with an IC_{50} of 1.0 μM. Tubulin inhibitor 14 also inhibits tubulin polymerization and the formation of endothelial cell capillary-like tubes. Tubulin inhibitor 14 is a microtubule-destabilizing agent with potential tumor-selectivity and antiangiogenic and vascular disrupting features[1].

IC_{50} & Target

IC_{50}: 1.0 μM (NQO2)[1].

In Vitro

Tubulin inhibitor 14 (compound 4) (0-20 μM, 96 h) inhibits cancer cells proliferation [1].
Tubulin inhibitor 14 (1-5 μM, 24 or 48 h) causes G2/M cell cycle arrest[1].
Tubulin inhibitor 14 (0.5-1 μM, 24 h) induces SNU423 cell apoptosis[1].
Tubulin inhibitor 14 (0.5-1 μM, 24 h) disrupts the cytoskeleton network in endothelial cells[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	MDA-MB-231, HepG2, SNU423, A549, HCT116
Concentration:	0 μM, 0.1 μM, 0.5 μM, 1 μM, 5 μM, 10 μM, and 20 μM
Incubation Time:	96 h
Result:	Inhibited cell proliferation with IC_{50} values of 0.41 μM (MCF-7) , 0.07 μM (MDA-MB-231), 1.44 μM (HepG2), 0.25 μM (SNU423), 0.27 μM (A549), and 0.13 μM (HCT116).

Cell Cycle Analysis[1]

Cell Line:	HepG2 cells
Concentration:	1, 2, 5 μM
Incubation Time:	24 h, 48 h
Result:	Caused G2/M cell cycle arrest.

Apoptosis Analysis[1]

Cell Line:	SNU423 cells

Concentration:	0.5, 1 μM
Incubation Time:	24 h
Result:	Induced SNU423 cell apoptosis.

Immunofluorescence[1]

Cell Line:	HUVECs
Concentration:	0.5, 1 μM
Incubation Time:	24 h
Result:	Disrupted the cytoskeleton network in endothelial cells.

REFERENCES

[1]. Mai A. Elhemely, et al. SAR of Novel 3-Arylisoquinolinones: meta-Substitution on the Aryl Ring Dramatically Enhances Antiproliferative Activity through Binding to Microtubules. J Med Chem. 2022 Mar 24;65(6):4783-4797.

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