Antitumor agent-96

Cat. No.: HY-149972

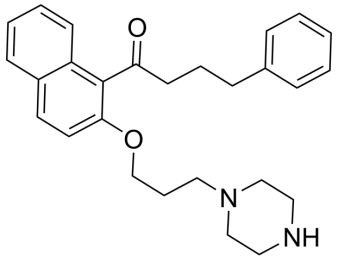
Molecular Formula: $C_{27}H_{32}N_2O_2$

Molecular Weight: 416.56

Target: Apoptosis

Pathway: Apoptosis

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Antitumor agent-96 (Compound D34) is a potent MRE11 inhibitor. Antitumor agent-96 down-regulates the HR pathway by binding with MRE11 and suppressing its endonuclease functions. Antitumor agent-96 induces CM cells apoptosis[1].

IC_{50} & Target

MRE11[1]

In Vitro

Antitumor agent-96 (Compound D34; 72 h) has a particular cytotoxicity selectivity in CM cells of CM-AS16 (IC_{50} = 2.9±0.1 μM), CRMM2 (IC_{50} = 0.7 ± 0.0 μM), CM2005.1 (IC_{50} = 1.0 ± 0.1 μM), and CRMM1 (IC_{50} = 1.3 ± 0.3 μM), compared to ocular melanoma, cutaneous melanoma and normal cells[1].

Antitumor agent-96 (0.1-10 μM; 48 h) induces CRMM1 cell apoptosis[1].

Antitumor agent-96 (0.3 μM; 0-72 h) inhibits CRMM1 cell migration[1].

Antitumor agent-96 (0.3-10 μM; 48 h) augments DNA damage accumulation in CM cells and down-regulates MRN complex in HR pathway[1].

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

Cell Proliferation Assay[1]

Cell Line:	CM-AS16, CRMM2 , CM2005.1, CRMM1, HL7702 and PIG1
Concentration:	
Incubation Time:	72 h
Result:	Inhibited proliferation with IC_{50}s of 2.9 ± 0.1, 0.7 ± 0.0, 1.0 ± 0.1, 1.3 ± 0.3, 25.6 ± 0.8 and 32.9 ± 0.3 μM against CM-AS16, CRMM2, CM2005.1, CRMM1, HL7702 and PIG1, respectively.

Apoptosis Analysis[1]

Cell Line:	CRMM1 cells
Concentration:	0.1, 0.3, 1, 3 and 10 μM
Incubation Time:	48 h
Result:	Significantly led to CRMM1 cells death over the concentrations of 0.3 μM. The apoptotic rates rose to 80% when incubated at 3 μM.

Cell Migration Assay [1]

Cell Line:	CRMM1 cells
Concentration:	0.3 μM
Incubation Time:	0, 24, 48 and 72 h
Result:	Inhibited migration rate from 70% to 45% at 72 h.

Western Blot Analysis[1]

Cell Line:	CRMM1 and CRMM2
Concentration:	0.3, 1, 3 and 10 μM
Incubation Time:	48 h
Result:	Stimulated tumor suppressor p53. Induced significant accumulation of γ-H2AX. The three MRN subunits MRE11, RAD50, and NBS1, were significantly down-regulated in a dose-dependent manner. The expression of MRN downstream effectors, including BCRA1 and RAD51, were also inhibited in both CRMM1 and CRMM2 cells.

In Vivo

Antitumor agent-96 dihydrochloride (Compound D34 dihydrochloride; 10 and 20 mg/kg; i.p.; five times per week for 28 days) shows anti-tumor effect in mice[1].

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

Animal Model:	NCG mice, CRMM1 xenograft tumor model[1]
Dosage:	10 mg/kg and 20 mg/kg
Administration:	Intraperitoneal injection, five times per week for 28 days
Result:	Suppressed tumor growth. Did not induce any conspicuous body weight loss.

REFERENCES

[1]. Wei J, et al. Drug repurposing of propafenone to discover novel anti-tumor agents by impairing homologous recombination to delay DNA damage recovery of rare disease conjunctival melanoma. Eur J Med Chem. 2023 Mar 15;250:115238.

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