Anticancer agent 53

Cat. No.: HY-146407

CAS No.: 1926985-18-3

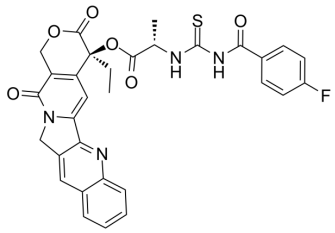
Molecular Formula: $C_{31}H_{25}FN_4O_6S$

Molecular Weight: 600.62

Target: Apoptosis

Pathway: Apoptosis

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



BIOLOGICAL ACTIVITY

Description

Anticancer agent 53 is a potent anticancer agent. Anticancer agent 53 shows in vitro cytotoxicity. Anticancer agent 53 induces apoptosis and cell cycle arrest in S/G2/M phases. Anticancer agent 53 shows antitumor activity with no apparent toxicity[1].

In Vitro

Anticancer agent 53 (compound c20) (0-1000 nM; 72 h) shows cytotoxicity with IC_{50}s of 2.3, 42.0, 4.3, 96.3, 24.0, 47.4 nM for Hep3B, MCF7, A549, MDA-MB-231, KB, KB-vin cells, respectively[1].

Anticancer agent 53 (0.025, 0.05, 0.1 μM; 48 h) induces apoptosis and cell cycle arrest in S/G2/M phases[1].

Anticancer agent 53 (0.1. 0.2 μM; 6 h) inhibits topoisomerase I activity in A549 cells[1].

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

Cell Cycle Analysis[1]

Cell Line:	A549 cells
Concentration:	0.025, 0.05, 0.1 μM
Incubation Time:	0-48 h
Result:	Induced cell cycle arrest in S/G2/M phases.

Apoptosis Analysis[1]

Cell Line:	A549 cells
Concentration:	0.025, 0.05, 0.1 μM
Incubation Time:	0-48 h
Result:	Induced apoptosis with the proapoptotic protein Caspase-3 and Bax were up-regulated and anti-apoptotic Bcl-2 was down-regulated.

In Vivo

Anticancer agent 53 (5, 25 and 50 mg/kg; IP) shows no apparent toxicity to mouse liver, kidney and hemopoietic system[1].

Anticancer agent 53 (2 mg/kg; i.v; every other day for two weeks) shows antitumor effect in HCC mouse model[1].

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

Animal Model:	Balb/C mice[1]
Dosage:	5, 25 and 50 mg/kg (saline with 5% DMSO and 5% Cremophor EL)
Administration:	I.p.
Result:	Showed no body weight loss, no significant liver damage, no significant damage occurred in spleens and livers.

Animal Model:	6-8 weeks Female BALB/c nude mice (Hep3B cells)[1]
Dosage:	1, 2 mg/kg
Administration:	I.v., every other day for total 7 doses
Result:	Significantly inhibited tumor growth with an average body weight of 24 g and an average tumor volume of 3800 mm^3 at 1 mg/kg and an average body weight of 22 g and average tumor volume 2380 mm^3 at 2 mg/kg.

Animal Model:	6-8 weeks FVB/N mice (HCC mouse model)[1]
Dosage:	2 mg/kg
Administration:	I.v.; every other day for two weeks
Result:	Inhibited the tumor growth and reduced the liver weights, and t inhibited proliferation of HCC tissues.

REFERENCES

[1]. Yang CJ, et al. Design, synthesis and antineoplastic activity of novel 20(S)-acylthiourea derivatives of camptothecin. Eur J Med Chem. 2020 Feb 1;187:111971.

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