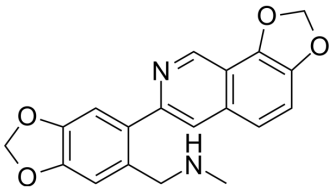
Topoisomerase I/II inhibitor 2

Cat. No.:	HY-143402
CAS No.:	2770804-58-3
Molecular Formula:	$C_{19}H_{16}N_2O_4$
Molecular Weight:	336.34
Target:	Topoisomerase
Pathway:	Cell Cycle/DNA Damage
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Topoisomerase I/II inhibitor 2 (compound 1a) is a potent Topoisomerase inhibitor (IC_{50}= 9.82 μM on Huh7 cells and 6.83 μM on LM9 cells). Topoisomerase I/II inhibitor 2 has dual inhibition on DNA topoisomerase I/II, also can obviously reduce the growth of xenograft tumor in mice model. Topoisomerase I/II inhibitor 2 has the potential value in researching liver cancer[1] .

IC_{50} & Target	Topoisomerase I	Topoisomerase II

In Vitro

Topoisomerase I/II inhibitor 2 (compound 1a) (0-150 μM; 72 hours) has favourable anti-proliferative activity in cancer cell lines, and better inhibitory activity on two human hepatocellular carcinoma cell lines (HuH7, LM9)[1].
Topoisomerase I/II inhibitor 2 (20 μM; 24 hours) has no damage to the DNA of HuH7 cells while some damage is noticed on LM9 cells[1].
Topoisomerase I/II inhibitor 2 (1.25-8 μM; 1-2 weeks) inhibits cell proliferation of LM9 and Huh7 in a concentration-dependent manner[1].
Topoisomerase I/II inhibitor 2 (1.25-8 μM; 24 hours) has a good inhibitory effect on the migration and invasion of LM9 and HuH7 cells with concentration-dependent manner[1].
Topoisomerase I/II inhibitor 2 (0-20 μM; 24 hours) can inhibit the expression of matrix metalloproteinases-9 (MMP-9) in LM9 and HuH7 cells[1].
Topoisomerase I/II inhibitor 2 (0-20 μM; 48 hours) inhibits cells proliferation by blocking cell cycle at the G_2/M phase[1].
Topoisomerase I/II inhibitor 2 (3.5-20 μM; 48 hours) can injure mitochondrial function and induce cell apoptosis in a concentration-dependent manner[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay

Cell Line:	LM9, HuH7, SK-hep-1, HepG2, HT-29, HCT-116, RKO, SW480, MCF-7, MDA-B-231, HGC-27, SGC-7901, BGC-823, A549, U251, HL-60, LO2[1]
Concentration:	0-150 μM
Incubation Time:	72 hours
Result:	Displayed favourable anti-proliferative activity and had better inhibitory activity on two human hepatocellular carcinoma cell lines (HuH7, LM9).

Western Blot Analysis

Cell Line:	LM9 and HuH7 cells[1]
Concentration:	0, 3.75, 7.5, 15 μM in LM9; 0, 5, 10, 20 μM in HuH7
Incubation Time:	48 hours
Result:	Inhibited the expression of MMP-9.

Cell Cycle Analysis

Cell Line:	LM9 and HuH7 cells[1]
Concentration:	0, 3.75, 7.5, 15 μM in LM9; 0, 5, 10, 20 μM in HuH7
Incubation Time:	48 hours
Result:	Inhibited cells proliferation by blocking cell cycle at the G_2/M phase.

Apoptosis Analysis

Cell Line:	LM9 and HuH7 cells[1]
Concentration:	3.5, 7, 14 μM in LM9; 5, 10, 20 μM in HuH7
Incubation Time:	48 hours
Result:	Induced apoptosis in a dose-dependent manner.

REFERENCES

[1]. Deng X, et al. Design, synthesis and anti-hepatocellular carcinoma activity of 3-arylisoquinoline alkaloids. Eur J Med Chem. 2022;228:113985.

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