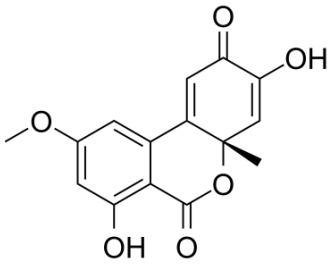
Dehydroaltenusin

Cat. No.:	HY-100513A
CAS No.:	31186-13-7
Molecular Formula:	$C_{15}H_{12}O_6$
Molecular Weight:	288.25
Target:	Apoptosis; DNA/RNA Synthesis
Pathway:	Apoptosis; Cell Cycle/DNA Damage
Storage:	Please store the product under the recommended conditions in the COA.



BIOLOGICAL ACTIVITY

Description	Dehydroaltenusin is a small molecule selective inhibitor of eukaryotic **DNA polymerase α**, a type of antibiotic produced by a fungus with an **IC_{50}** value of 0.68 μM. The inhibitory mode of action of dehydroaltenusin against mammalian pol α activity is competitive with respect to the DNA template primer (K_i=0.23 μM) and non-competitive with respect to the 2'-deoxyribonucleoside 5'-triphosphate substrate (K_i=0.18 μM)[1].Dehydroaltenusin arrests the cancer cell cycle at the S-phase and triggers **apoptosis**[1].Dehydroaltenusin possesses anti-tumor activity against human adenocarcinoma tumor in vivo[1].
IC_{50} & Target	IC50: 0.68 μM (DNA polymerase α)[1]

In Vitro

Dehydroaltenusin (38.0-44.4 μM; 24 hours) inhibits cell growth in a dose-dependent manner and the LD_{50} values varies from 38.0 to 44.4 μM[1].

Dehydroaltenusin (38.0 μM; 6 hours) inhibits cell growth by blocking the S-phase of DNA replication[1].

Dehydroaltenusin (75.0 μM; 24 hours) has a strong apoptotic effect on human cancer cells, DNA ladders can be detected after 12 h of incubation with dehydroaltenusin[1].

Cell Proliferation Assay[1]

Cell Line:	Human cancer cell line: A549, BALL-1, HeLa and NUGC-3 cells
Concentration:	38.0-44.4 μM
Incubation Time:	24 hours
Result:	Inhibited cell growth of human cancer cell lines.

Cell Cycle Analysis[1]

Cell Line:	HeLa cells
Concentration:	38.0 μM
Incubation Time:	6 hours
Result:	Decreased to 45% of the control value after 6 h of incubation [^{3}H]-thymidine.

	Apoptosis Analysis[1]
	Cell Line: HeLa cells
	Concentration: 75.0 μM
	Incubation Time: 12-24 hours
	Result: Detected DNA ladders after 12 hours of incubation.
In Vivo	Dehydroaltenusin (injection; 20 mg/kg; 2-day intervals; 12-39 days) shows suppressed tumor growth from 21 days[1].
	Animal Model: Nude mice bearing HeLa solid tumors[1]
	Dosage: 20 mg/kg
	Administration: Injection; 20 mg/kg; 2-day intervals; 12-39 days
	Result: Suppressed tumor growth.

REFERENCES

[1]. Mizushina Y, et al. Dehydroaltenusin is a specific inhibitor of mammalian DNA polymerase α. Expert Opin Investig Drugs. 2011 Nov;20(11):1523-34.

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