ABT-510

Cat. No.:	HY-13545
CAS No.:	251579-55-2
Molecular Formula:	$C_{46}H_{83}N_{13}O_{11}$
Molecular Weight:	994.23
Sequence Shortening:	Ac-{Gly-Me}-GVIT-{Nva}-IRP
Target:	Apoptosis
Pathway:	Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description

ABT-510 is an anti-angiogenic TSP peptide (Thrombospondin-1 analogue) that induces apoptosis and inhibits ovarian tumour growth in an orthotopic, syngeneic model of epithelial ovarian cancer. ABT-510 also reduces angiogenesis and inflammatory responses in a murine model of inflammatory bowel disease. ABT-510 can be used in studies of cancer (particularly epithelial ovarian cancer) and inflammatory bowel disease (IBD)[1][2].

In Vitro

ABT-510 (1, 5, 10, 20, 50 nM; 24 h) induces apoptosis in ID8 cells and (50 nM; 24 h) increases the incidence of apoptosis in the human epithelial cancer cell lines SKOV3, OVCAR3, and CAOV3[1].ABT-510 (0-10 μM; 7 days) inhibits NO-stimulated vascular cell outgrowth into and invasion through extracellular matrix. ABT-510 blocks tumor-driven vascular cell outgrowth, NO-driven cGMP flux, and CD36-mediated fatty acid uptake. [3].

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

Apoptosis Analysis[1]

Cell Line:	ID8, SKOV3, OVCAR3, and CAOV3 cells
Concentration:	1, 5, 10, 20, 50 nM
Incubation Time:	24 h
Result:	Induced ID8 cells apoptosis and increased in apoptosis in the human EOC cell lines SKOV3, OVCAR3, and CAOV3.

Apoptosis Analysis[3]

Cell Line:	Tissue biopsies of B16F10 melanoma tumors grown in C57BL/6 mice
Concentration:	0-10 μM
Incubation Time:	7 days
Result:	Inhibited NO-stimulated vascular cell outgrowth into and invasion through extracellular matrix.

In Vivo

ABT-510 (100 mg/kg; i.p.; single daily for 90 days) induces cells apoptosis in vivo and leads to a significant reduction in epithelial ovarian tumor size, ascites fluid volume, and secondary lesion dissemination in mice[1].

ABT-510 (60 mg/kg; osmotic minipumps for s.c.; single daily for 7 days) decreases angiogenesis and inflammation in a murine model of inflammatory bowel disease[2].

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

Animal Model:	TSP-1-Null mice (C57BL/6 background; orthotopic, syngeneic model of epithelial ovarian cancer)[1].
Dosage:	100 mg/kg
Administration:	Intraperitoneal injection; single daily for 90 days
Result:	Reduced ovarian tumor growth in wild-type and TSP-1-Null Mice. Significantly reduced the volume of ascites and completely abolished the formation of peritoneal lesions. Reversed ovarian tumor hypervascularization and increased the proportion of mature blood vessels.

Animal Model:	TSP-1-Null mice (C57BL/6 background; 6-week-old; DSS-induced inflammatory bowel disease murine model)[2].
Dosage:	60 mg/kg
Administration:	Subcutaneously implanted osmotic minipumps (0.5μL/h); single daily for 7 days
Result:	Significantly delayed DSS-induced bleeding and improved the overall severity of disease. Significantly diminished inflammation grading and angiogenesis

REFERENCES

[1]. Greenaway J, et al. ABT-510 induces tumor cell apoptosis and inhibits ovarian tumor growth in an orthotopic, syngeneic model of epithelial ovarian cancer. Mol Cancer Ther. 2009 Jan;8(1):64-74.

[2]. Punekar S, et al. Thrombospondin 1 and its mimetic peptide ABT-510 decrease angiogenesis and inflammation in a murine model of inflammatory bowel disease. Pathobiology. 2008;75(1):9-21.

[3]. Isenberg JS, et.al. Differential effects of ABT-510 and a CD36-binding peptide derived from the type 1 repeats of thrombospondin-1 on fatty acid uptake, nitric oxide signaling, and caspase activation in vascular cells. Biochem Pharmacol. 2008 Feb 15;75(4):875-82.

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