Apoptin-derived peptide

Cat. No.:	HY-P10090
CAS No.:	2232156-31-7
Molecular Formula:	$C_{223}H_{417}N_{89}O_{50}S$
Molecular Weight:	5177.33
Sequence:	Met-Gly-Arg-Lys-Lys-Arg-Arg-Gln-Arg-Arg-Arg-Lys-Pro-Pro-Ser-Lys-Lys-Arg-Ile-Arg-Ile-Gly-Ile-Ala-Gly-Ile-Thr-Ile-Thr-Leu-Ser-Leu-Arg-Pro-Arg-Thr-Ala-Lys-Arg-Arg-Ile-Arg-Leu
Sequence Shortening:	MGRKKRRQRRRKPPSKKRIRIGIAGITITLSLRPRTAKRRIRL
Target:	Akt; PI3K; Apoptosis
Pathway:	PI3K/Akt/mTOR; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description

Apoptin-derived peptide is an antitumor polypeptide with cytotoxicity. Apoptin-derived peptide promotes apoptosis and necrosis of gastric cancer (GC) cells by regulating PI3K/AKT/ARNT signaling. Apoptin-derived peptide inhibited the invasion and migration of cancer cells, and inhibited the expression and phosphorylation of the subunit p85 of PI3K, which further inhibited the PI3K/AKT pathway involved in the development of gastric cancer[1].

In Vitro

Apoptin-derived peptide (40-100 μg/mL, 24 h) promotes ARNT down-regulation by inhibiting the PI3K/AKT signaling pathway to reverse CDDP resistance in SGC-7901/CDDP cells[1].
Apoptin-derived peptide (10-30 μg/mL, 24 h) inhibits the migration and invasion in SGC-7901, SGC-7901/CDDP and MGC-803 cells[1].
Apoptin-derived peptide (30-60 μg/mL, 24 h) increases the CDDP sensitivity of SGC-7901/CDDP cells[1].
Apoptin-derived peptide (10-20 μg/mL, 24 h) increases the G2/M phase population and induces apoptosis in SGC-7901 and SGC-7901/CDDP cells.[1].
Apoptin-derived peptide (10-70 μg/mL, 4-24 h) has an excellent inhibitory effect in SGC-7901 and SGC-7901/CDDP cells.
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	HEK293, SGC-7901, SGC-7901/CDDP
Concentration:	10 μg/mL, 20 μg/mL, 30 μg/mL, 40 μg/mL, 50 μg/mL, 60 μg/mL, 70 μg/mL
Incubation Time:	4 h, 6 h, 8 h, 12 h, 18 h, 24 h
Result:	Produced large effects in both SGC-7901 and SGC-7901/CDDP cells at 60 μg/mL for 6 h and had no obvious effect on HEK293 cells.

Apoptosis Analysis[1]

Cell Line:	SGC-7901, SGC-7901/CDDP
Concentration:	30 μg/mL, 60 μg/mL

Incubation Time:	24 h
Result:	Induced SGC-7901 cell apoptosis in a concentration dependent manner. Induced considerable apoptotic cell death in SGC-7901/CDDP cells in a strong time- and dose-dependent fashion.

Cell Cycle Analysis[1]

Cell Line:	SGC-7901, SGC-7901/CDDP
Concentration:	10 μg/mL, 20 μg/mL
Incubation Time:	24 h
Result:	Increase the G2/M phase population.

Cell Invasion Assay[1]

Cell Line:	SGC-7901, SGC-7901/CDDP, MGC-803
Concentration:	10 μg/mL, 20 μg/mL, 30 μg/mL
Incubation Time:	48 h
Result:	Significantly reduced the number of invasive cells.

Cell Migration Assay [1]

Cell Line:	SGC-7901, SGC-7901/CDDP, MGC-803
Concentration:	10 μg/mL, 20 μg/mL, 30 μg/mL
Incubation Time:	48 h
Result:	Effectively inhibited the migration ability of MGC-803, SGC-7901, and SGC-7901/CDDP cells in a dose-dependent manner.

Western Blot Analysis[1]

Cell Line:	SGC-7901, SGC-7901/CDDP
Concentration:	40 μg/mL, 60 μg/mL, 80 μg/mL, 100 μg/mL
Incubation Time:	24 h
Result:	Significantly down-regulated the phosphorylation of p85 (p-p85) and AKT (p-AKT) proteins at concentrations from 40 μg/mL to 100 μg/mL. Down-regulated the expression of MDR1 and ARTN in Apoptin-derived peptide-treated SGC-7901/CDDP cells. Notably decreased p85 and AKT activities.

REFERENCES

[1]. Zhou D, et al. Apoptin-derived peptide reverses cisplatin resistance in gastric cancer through the PI3K-AKT signaling pathway [J]. Cancer Medicine, 2018, 7(4): 1369-1383.

Caution: Product has not been fully validated for medical applications. For research use only.

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