Antitumor agent-115

Cat. No.: HY-155745

CAS No.: 2759277-20-6

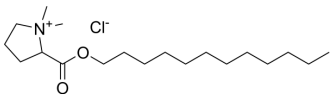
Molecular Formula: $C_{19}H_{38}ClNO_2$

Molecular Weight: 347.96

Target: Apoptosis

Pathway: Apoptosis

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



BIOLOGICAL ACTIVITY

Description

Antitumor agent-115 (SS-12) is an effective anti-tumor compound with an IC_{50} value of 0.34 μM-24.14 μM for cell line 4T1. Antitumor agent-115 can block the cell cycle of mouse breast cancer cell line 4T1, reduce the mitochondrial membrane potential, and induce apoptosis, and the IC_{50} value is 8-25 μmol/L for cell viability. Antitumor agent-115 can be used for breast cancer research[1].

In Vitro

Antitumor agent-115 (SS-12) (1.25 μM, 10 μM, 40 μM, 24h) induces 4T1 cell apoptosis primarily by arresting cell cycle at G0/G1[1].
Antitumor agent-115 (15 μM, 30 μM, 60 μM, 24h) inhibits 4T1 cell migration and invasion[1].
Antitumor agent-115 (10 μM, 24h) induces apoptosis of 4T1 cells through mitochondria pathway[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	4T1 cell
Concentration:	1-128 μM
Incubation Time:	24, 48, 72 h
Result:	Inhibited 4T1 cells proliferation with IC_{50} value of 8-25 μM.

Apoptosis Analysis[1]

Cell Line:	4T1 cell
Concentration:	1.25 μM, 10 μM, 40 μM
Incubation Time:	24 h
Result:	Increased apoptosis rates of 4T1 cell at concentration of 1.25 μM.

Cell Cycle Analysis[1]

Cell Line:	4T1 cell
Concentration:	1.25 μM, 10 μM, 40 μM

Incubation Time:	24 h
Result:	Increased the proportion in the G0/G1 phase and decreased in the S and G2/M phases of 4T1 cells.

Cell Migration Assay [1]

Cell Line:	4T1 cell
Concentration:	15 μM, 30 μM, 60 μM
Incubation Time:	24 h
Result:	Expanded the wound area and inhibited cell migration and invasion at concentration of 0.03 μM.

Western Blot Analysis[1]

Cell Line:	4T1 cell
Concentration:	10 μM
Incubation Time:	24 h
Result:	Improved the cleaved caspase-3 expression and and Bax expression, but inhibited the anti-apoptosis protein Bcl2 expression in 4T1 cells.

In Vivo

Antitumor agent-115 (SS-12) (10 mg stachydrine/kg equivale, 200 μL for Oral administration) has greater bioavailability in rats[1].

Antitumor agent-115 (0.2 mmol/kg for Oral administration) has anti-tumor effects in breast cancer model mice and improves morphological structure of spleen in model mice[1].

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

Animal Model:	Rats[1]
Dosage:	10 mg stachydrine/kg equivale, 200 μL
Administration:	Oral administration (p. o.)
Result:	Exhibited high systemic exposure with 6.10 μg/mL of C_{max} value and 14.75 h μg/mL of AUC_{0-t} value.

Animal Model:	Tumor-bearing mice[1]
Dosage:	0.2 mmol/kg
Administration:	Oral administration (p. o.)
Result:	Inhibitory rate was 51.47% ($P < 0.01$) Displayed significant tumor cell shrinkage and larger void areas in tumor tissues Exhibited more weight loss than the model group and other treatment groups, increased of both AST and ALT levels and reduced spleen index of the tumor-bearing mice

REFERENCES

[1]. Zeng H, et al. Synthesis, characterization and anti-breast cancer activities of stachydrine derivatives. Eur J Med Chem. 2023 Jul 26;259:115679.

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