Haemanthamine hydrochloride

Cat. No.: HY-114489B

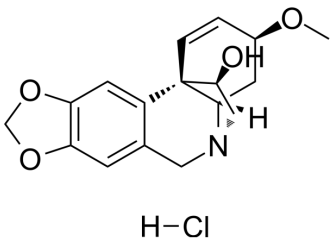
Molecular Formula: $C_{17}H_{20}ClNO_4$

Molecular Weight: 337.8

Target: Apoptosis; Influenza Virus; Parasite

Pathway: Apoptosis; Anti-infection

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



BIOLOGICAL ACTIVITY

Description

Haemanthamine hydrochloride is a crinine-type alkaloid isolated from the Amaryllidaceae plants with potent anticancer activity. Haemanthamine hydrochloride targets ribosomal that inhibits protein biosynthesis during the elongation stage of translation. Haemanthamine hydrochloride has pro-apoptotic, antioxidant, antiviral, antimalarial and anticonvulsant activities[1][2].

IC_{50} & Target

Plasmodium

In Vitro

Haemanthamine (1-100 μM; 24-48 hours; A2780 cells) treatment shows a time- and dose-dependent decrease in cell viability [2].

Haemanthamine (10 μM; 24-72 hours; A2780 cells) treatment leads to a significant inhibition of A2780 cell proliferation[2].

Haemanthamine binds at the A-site cleft of the peptidyl transferase center on the large ribosomal subunit, creating unique molecular interactions with the 25S rRNA. Haemanthamine has a highly specific inhibitory effect on pre-rRNA processing, leading to the activation of a p53-dependent antitumoral surveillance pathway known as nucleolar stress[1].

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

Cell Viability Assay[2]

Cell Line:	A2780 ovarian cancer cells
Concentration:	1 μM, 10 μM, 50 μM, 100 μM
Incubation Time:	24 hours, 48 hours
Result:	Showed a time- and dose-dependent decrease in cell viability.

Cell Proliferation Assay[2]

Cell Line:	A2780 ovarian cancer cells
Concentration:	1 μM, 10 μM, 50 μM, 100 μM
Incubation Time:	24 hours, 48 hours, 72 hours
Result:	Led to a significant inhibition of A2780 cell proliferation.

In Vivo

A pharmacokinetic study of Haemanthamine in rats shows a rapid distribution phase of 30 min, a half-life of 70.4 min, and a

	major clearance through renal elimination. The high distribution volume of 13.7 L/kg suggests a high intracellular penetration, and its plasmatic concentration remains higher than 1 μM for at least 1 hr after a single 10-mg/kg administration[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Pellegrino S, et al. The Amaryllidaceae Alkaloid Haemanthamine Binds the Eukaryotic Ribosome to Repress Cancer Cell Growth. Structure. 2018 Mar 6;26(3):416-425.e4.

[2]. Seifrtová M, et al. Haemanthamine alters sodium butyrate-induced histone acetylation, p21WAF1/Cip1 expression, Chk1 and Chk2 activation and leads to increased growth inhibition and death in A2780 ovarian cancer cells. Phytomedicine. 2017 Nov 15;35:1-10.

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