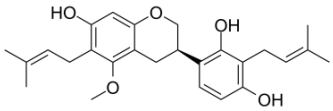
Licoricidin

Cat. No.:	HY-N3387
CAS No.:	30508-27-1
Molecular Formula:	$C_{26}H_{32}O_5$
Molecular Weight:	424.53
Target:	Apoptosis; NF-κB; Akt; MMP
Pathway:	Apoptosis; NF-κB; PI3K/Akt/mTOR; Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Licoricidin (LCD) is isolated from Glycyrrhiza uralensis Fisch, possesses anti-cancer activities. Licoricidin (LCD) inhibit SW480 cells (IC_{50}=7.2 μM) by inducing cycle arrest, apoptosis and autophagy, and is a potential chemopreventive or chemotherapeutic agent against colorectal cancer[1]. Licoricidin (LCD) inhibits Lung Metastasis by inhibition of tumor angiogenesis and lymphangiogenesis as well as changes in the local microenvironment of tumor tissues the anticarcinogenic effect[1]. Licoricidin enhanced gemcitabine-induced cytotoxicity in Osteosarcoma (OS) cells by inactivation of the Akt and NF-κB pathways in vitro and in vivo[3]. Licoricidin blocks UVA-induced photoaging via ROS scavenging, limits the activity of MMP-1, it can be considered as an active ingredient in new topically applied anti-ageing formulations[4].

In Vitro

Licoricidin (LCD) (0-20 μM; 24 hours) dose-dependently inhibits the viability of colon cancer cell lines with various pathological and genetic characters, namely SW480, HCT116, SW620 and LoVo cells, with IC_{50} values of 7.2, 5.4, 4.5 and 5.1 μM, respectively[1].

Licoricidin (LCD) (0-20 μM; 0-12 hours) induces cell apoptosis was accompanied with the activation of caspase-3 by cleavage in a time- and dose-dependent manner[1].

Licoricidin (LCD) (0-20 μM; 0-12 hours) induces autophagy of SW480 cells, increases the cleavage of LC3-I to LC3-II and the degradation of p62 in a time and dose dependent manner[1].

Licoricidin (LCD) (0-5 μg/ml; 18 hours) inhibits cell migration, MMP-9 secretion, and VCAM expression in 4T1 cells[2].

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

Cell Viability Assay[1]

Cell Line:	SW480, HCT116, SW620 and LoVo cells
Concentration:	0-20 μM
Incubation Time:	24 hours
Result:	Decreased colon cancer cell lines viability.

Western Blot Analysis[1]

Cell Line:	SW480 cells
Concentration:	0 μM, 2.5 μM, 5 μM, 10 μM, 20 μM
Incubation Time:	0 hours, 1 hour, 3 hours, 6 hours, 12 hours

Result:	Induced cell apoptosis.

In Vivo

Licoricidin (LCD) (intraperitoneal injection; 5, 10, or 20 mg/kg; once daily; 15 days) significantly inhibited the growth of SW480 xenografts in nude mice with an inhibitory rate of 43.5%[1].
Licoricidin (LCD) (intraperitoneal injection; 5, 10, or 20 mg/kg; once daily; 32 days) reduces pulmonary metastasis and the expression of CD45, CD31, HIF-1α, iNOS, COX-2, and VEGF-A in tumor tissues, additionally, decreases protein expression of VEGF-R2, VEGF-C, VEGF-R3, and LYVE-1 in tumor tissues of licoricidin-treated mice[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	SW480 xenografted tumor growth in nude mice[1]
Dosage:	5, 10, or 20 mg/kg
Administration:	Intraperitoneal injection; once daily; 15 days
Result:	Decreased tumor volumes.

Animal Model:	BALB/c mouse orthotopic model[2]
Dosage:	5, 10, or 20 mg/kg
Administration:	Intraperitoneal injection; 5, 10, or 20 mg/kg; once daily; 32 days
Result:	Inhibited Lung Metastasis of 4T1 Murine Mammary Carcinoma cells.

REFERENCES

[1]. Ji S, et al. Licoricidin inhibits the growth of SW480 human colorectal adenocarcinoma cells in vitro and in vivo by inducing cycle arrest, apoptosis and autophagy. Toxicol Appl Pharmacol. 2017 Jul 1;326:25-33.

[2]. Park SY, et al. Licoricidin, an Active Compound in the Hexane/Ethanol Extract of Glycyrrhiza uralensis, Inhibits Lung Metastasis of 4T1 Murine Mammary Carcinoma Cells. Int J Mol Sci. 2016 Jun 14;17(6).

[3]. Wang Y, et al. Licoricidin enhances gemcitabine-induced cytotoxicity in osteosarcoma cells by suppressing the Akt and NF-κB signal pathways. Chem Biol Interact. 2018 Jun 25;290:44-51.

[4]. Kim KJ, et al. Licoricidin, an isoflavonoid isolated from Glycyrrhiza uralensis Fisher, prevents UVA-induced photoaging of human dermal fibroblasts. Int J Cosmet Sci. 2017 Apr;39(2):133-140.

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