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-$\kappa$B; Akt; MMP
Pathway: Apoptosis; NF-$\kappa$B; PI3K/Akt/mTOR; Metabolic Enzyme/Protease
Storage: Please store the product under the recommended conditions in the COA.

**BIOLOGICAL ACTIVITY**

**Description**
Licoricidin (LCD) is isolated from Glycyrrhiza uralensis Fisch, possesses anti-cancer activities. Licoricidin (LCD) inhibit SW480 cells ($IC_{50}=7.2 \, \mu M$) 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-$\kappa$B 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 $\mu M$; 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 $\mu M$, respectively$^{[1]}$.
Licoricidin (LCD) (0-20 $\mu M$; 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 $\mu M$; 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 $\mu g/ml$; 18 hours) inhibits cell migration, MMP-9 secretion, and VCAM expression in 4T1 cells$^{[2]}$.

**Cell Viability Assay$^{[1]}$**

<table>
<thead>
<tr>
<th>Cell Line</th>
<th>SW480, HCT116, SW620 and LoVo cells</th>
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</thead>
<tbody>
<tr>
<td>Concentration</td>
<td>0-20 $\mu M$</td>
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<tr>
<td>Incubation Time</td>
<td>24 hours</td>
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<tr>
<td>Result</td>
<td>Decreased colon cancer cell lines viability.</td>
</tr>
</tbody>
</table>

**Western Blot Analysis$^{[1]}$**

<table>
<thead>
<tr>
<th>Cell Line</th>
<th>SW480 cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration</td>
<td>0 $\mu M$, 2.5 $\mu M$, 5 $\mu M$, 10 $\mu M$, 20 $\mu M$</td>
</tr>
</tbody>
</table>
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].

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.

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


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