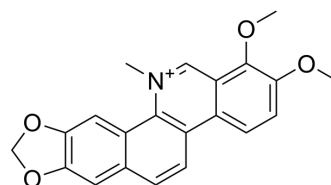


Chelerythrine

Cat. No.:	HY-N2359
CAS No.:	34316-15-9
Molecular Formula:	C ₂₁ H ₁₈ NO ₄
Molecular Weight:	348.37
Target:	PKC; Bcl-2 Family; Apoptosis; Autophagy; Beta-lactamase
Pathway:	Epigenetics; TGF-beta/Smad; Apoptosis; Autophagy; Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Chelerythrine is a natural alkaloid, acts as a potent and selective Ca ²⁺ /phospholipid-dependent PKC antagonist, with an IC ₅₀ of 0.7 μM ^[1] . Chelerythrine has antitumor, antidiabetic and anti-inflammatory activity ^[2] . Chelerythrine inhibits the BclXL-Bak BH3 peptide binding with IC ₅₀ of 1.5 μM and displaces Bax from BclXL. Chelerythrine triggers apoptosis and autophagy ^{[3][4]} .								
IC₅₀ & Target	PKC 0.7 μM (IC ₅₀)								
In Vitro	<p>Chelerythrine (48 h) inhibits the growth of L-1210 cells (IC₅₀: 0.53 μM)^[1].</p> <p>Chelerythrine (0-20 μM, 24 h) inhibits cell viability, induces apoptosis and autophagy in A549 and NCI-H1299 cells^[4].</p> <p>Chelerythrine (0-5 μM, 24 or 48 h) induces apoptosis in BclXL-overexpressing SH-SY5Y cells^[3].</p> <p>Chelerythrine (2.5-10 μM, 16 h) induces mitochondrial depolarization (decrease in mitochondrial potential) in SH-SY5Y cells, and stimulates release of CytC from isolated mitochondria^[4].</p> <p>Chelerythrine (0-100 ng/mL, 24 h) reduces the LPS induced production of NO and TNF-α in primary macrophages^[5].</p> <p>Chelerythrine (MIC: 0.156 mg/mL) shows antibacterial activities against Gram-positive bacteria, Staphylococcus aureus (SA), MRSA, and extended spectrum β-lactamase S. aureus (ESBLs-SA)^[6].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis^[4]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>A549 and NCI-H1299 cells</td> </tr> <tr> <td>Concentration:</td> <td>10, 15, 20 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Induced expression of LC3-II in a beclin 1-dependent way.</td> </tr> </table>	Cell Line:	A549 and NCI-H1299 cells	Concentration:	10, 15, 20 μM	Incubation Time:	24 h	Result:	Induced expression of LC3-II in a beclin 1-dependent way.
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In Vivo	<p>Chelerythrine (5 mg/kg, i.p., daily) attenuates partial unilateral ureteral obstruction (UUO) induced kidney injury, and restores renal function in neonatal rats^[2].</p> <p>Chelerythrine (1-10 mg/kg, i.p., at 24 and 1 h before injection of 100 μg/kg LPS) shows anti-inflammatory effects (increased survival rate, decreased serum nitrite and TNF-α level) in LPS induced mice endotoxic shock model^[5].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								

Animal Model:	Unilateral ureteral obstruction (UUO) induced neonatal rats ^[2]
Dosage:	5 mg/kg
Administration:	i.p., daily
Result:	Attenuated kidney injury (Increased kidney weight and restored renal function). Inhibited UUO-induced upregulated kidney injury molecule-1 expression, apoptosis, and renal fibrosis.

CUSTOMER VALIDATION

- Cell Commun Signal. 2021 Oct 11;19(1):103.
- J Headache Pain. 2022 Mar 8;23(1):35.
- Phytother Res. 2023 Jul 4.
- Cancer Cell Int. 2023 Jun 17;23(1):117.
- Front Pharmacol. 13 May 2021.

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- [2]. He N, et al. Antibacterial mechanism of chelerythrine isolated from root of *Toddalia asiatica* (Linn) Lam. *BMC Complement Altern Med*. 2018 Sep 26;18(1):261.
- [3]. Herbert JM, et al. Chelerythrine is a potent and specific inhibitor of protein kinase C. *Biochem Biophys Res Commun*. 1990 Nov 15;172(3):993-9.
- [4]. Shi B, et al. Protein kinase C inhibitor chelerythrine attenuates partial unilateral ureteral obstruction induced kidney injury in neonatal rats. *Life Sci*. 2019 Jan 1;216:85-91.
- [5]. Chan SL, et al. Identification of chelerythrine as an inhibitor of BclXL function. *J Biol Chem*. 2003 Jun 6;278(23):20453-6.
- [6]. Tang ZH, et al. Induction of reactive oxygen species-stimulated distinctive autophagy by chelerythrine in non-small cell lung cancer cells. *Redox Biol*. 2017 Aug;12:367-376.

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

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