

Product Data Sheet

Product Name: Corydalmine

Cat. No.: GC64090

Chemical Properties

Cas. No. 30413-84-4

Formula $C_{20}H_{23}NO_4$

M.Wt 341.4

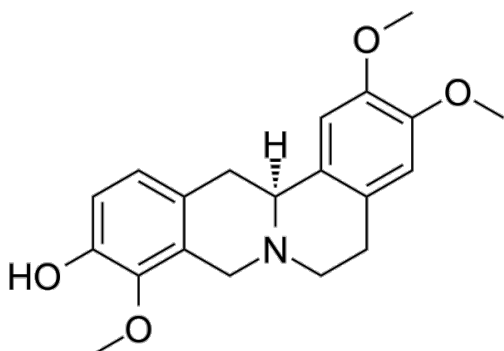
Solubility

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Cell lines RAW 264.7

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

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The RAW 264.7 were seeded in 24-well plate with 4×10^5 cells/well for sticking cultivation. The cultured RAW 264.7 cells were pretreated with different concentrations of Corydalmine (15, 30, 60, and 90 μ M) for 2h and then treated with LPS at 20ng/mL for 6h to induce cellular inflammation. The cells were harvested for mRNA expression of proinflammatory cytokines by real-time PCR.

Reaction Conditions 15, 30, 60, and 90 μ M; 2h and additional 6h

Applications Treatment with Corydalmine dose-dependently inhibited LPS-induced intracellular TNF- α and IL-6 mRNA expression levels.

Animal experiment [2]:

Animal models BALB/c mice inoculated with S180 sarcoma cells

Preparation Method Male BALB/c mice were inoculated with S180 sarcoma cells to establish the neuropathic cancer pain model. From day 6 to day 14 post-inoculation, mice were intragastrically administered with Corydalmine (5, 10, 20mg/kg) once daily. On day 14, the L4-L6 spinal cord segments were collected, and immunofluorescence staining was performed to assess the activation of astrocytes and microglia in the spinal dorsal horn.

Dosage form 5, 10, 20mg/kg; once daily; 9 days; i.g.

Applications Treatment with Corydalmine dose-dependently and significantly inhibited the activation of astrocytes and microglia in the dorsal horn of the mouse spinal cord.

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References:

- [1] KONG X, CHEN Z, XIA Y, et al. Dehydrocorydaline accounts the majority of anti-inflammatory property of *Corydalis Rhizoma* in cultured macrophage[J]. Evidence-Based Complementary and Alternative Medicine, 2020, 2020(1): 4181696.
- [2] HU Y, KODITHUWAKKU N D, ZHOU L, et al. Levo-corydalmine alleviates neuropathic cancer pain induced by tumor compression via the CCL2/CCR2 pathway[J]. Molecules, 2017, 22(6): 937.

Background

Corydalmine is a natural isoquinoline alkaloid predominantly found in plants of the genus *Corydalis*, possessing oral bioavailability and antifungal activity^[1]. Corydalmine alleviates neuropathic pain by inhibiting the NF- κ B-dependent CXCL1/CXCR2 signaling pathway and inhibits fungal spore germination^[2,3]. Corydalmine is commonly used in the treatment of chronic pain conditions (such as bone cancer pain and neuropathic pain), as well as in studies on anti-inflammation and the inhibition of plant pathogenic fungi^[4,5].

In vitro, RAW 264.7 macrophages were pretreated with Corydalmine (15, 30, 60, 90 μ M) for 2h, followed by stimulation with lipopolysaccharide (LPS, 20ng/mL) for an additional 6h, and Corydalmine dose-dependently inhibited the LPS-induced mRNA expression levels of TNF- α and IL-6^[6]. Primary cultured mouse astrocytes were activated with TNF- α (10ng/mL) for 1h and then treated with Corydalmine (3, 10, 30 μ M) for 24h, which resulted in a concentration-dependent inhibition of TNF- α -induced Cx43 expression and ethidium bromide uptake^[7].

In vivo, Corydalmine (5, 10, 20mg/kg; once daily) was administered intragastrically for 9 consecutive days to mice with neuropathic cancer pain induced by S180 sarcoma cell inoculation, resulting in a dose-dependent and significant inhibition of astrocyte and microglial activation in the spinal dorsal horn^[8]. In a mouse model of vincristine-induced neuropathic pain, intragastric administration of Corydalmine (5, 10, 20mg/kg; once daily) for 9 consecutive days dose-dependently promoted the translocation of nuclear factor erythroid 2-related factor 2 (Nrf2) from the cytoplasm to the nucleus^[7].

References:

- [1] HE X, ZENG Y, JIANG W. Eleven isoquinoline alkaloids on inhibiting tissue factor activity: structure-activity relationships and molecular docking[J]. Zeitschrift für Naturforschung C, 2021, 76(1-

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2): 11-19.

[2] ZHOU L, HU Y, LI C, et al. Levo-corydalmine alleviates vincristine-induced neuropathic pain in mice by inhibiting an NF-kappa B-dependent CXCL1/CXCR2 signaling pathway[J].

Neuropharmacology, 2018, 135: 34-47.

[3] BASHA S A, JHA R N, PANDEY V B, et al. Effect of 1-corydalmine, an alkaloid isolated from Corydalis chaerophylla roots on spore germination of some fungi[J]. Mycobiology, 2007, 35(2): 69-71.

[4] TANG X, DI X, ZHONG Z, et al. In vitro metabolism of l-corydalmine, a potent analgesic drug, in human, cynomolgus monkey, beagle dog, rat and mouse liver microsomes[J]. Journal of Pharmaceutical and Biomedical Analysis, 2016, 128: 98-105.

[5] DAI W L, BAO Y N, FAN J F, et al. Levo-corydalmine attenuates microglia activation and neuropathic pain by suppressing ASK1-p38 MAPK/NF-kB signaling pathways in rat spinal cord[J]. Regional Anesthesia & Pain Medicine, 2020, 45(3): 219-229.

[6] KONG X, CHEN Z, XIA Y, et al. Dehydrocorydaline accounts the majority of anti-inflammatory property of Corydalis Rhizoma in cultured macrophage[J]. Evidence-Based Complementary and Alternative Medicine, 2020, 2020(1): 4181696.

[7] ZHOU L, AO L, YAN Y, et al. Levo-corydalmine attenuates vincristine-induced neuropathic pain in mice by upregulating the Nrf2/HO-1/CO pathway to inhibit connexin 43 expression[J].

Neurotherapeutics, 2020, 17(1): 340-355.

[8] HU Y, KODITHUWAKKU N D, ZHOU L, et al. Levo-corydalmine alleviates neuropathic cancer pain induced by tumor compression via the CCL2/CCR2 pathway[J]. Molecules, 2017, 22(6): 937.

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