

Product Data Sheet

Product Name: Coronaridine

Cat. No.: GC64816

Chemical Properties

Cas. No. 467-77-6

Formula C₂₁H₂₆N₂O₂

M.Wt 338.44

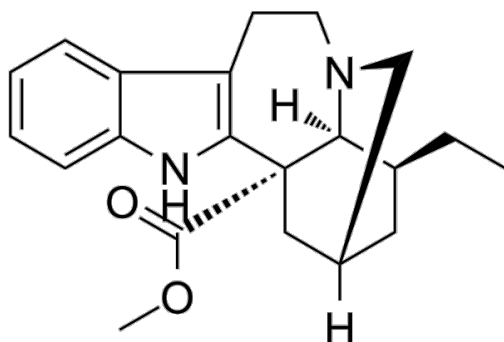
Solubility

Storage 4°C, protect from light

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 Hep-2 cells

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

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Preparation Method Hep-2 cells (2×10^4 cells/mL) were incubated with 15.62, 31.25, 62.5, and 125 µg/mL Coronaridine, respectively, for 6 hours at 37°C in a 5% CO₂ atmosphere. Minor modifications were made to the alkaline comet assay. Three hundred cells were randomly selected from three replicate slides, for a total of=900 cells, and each Coronaridine concentration was analyzed. The cells were scored for damage and divided into five categories to calculate the DNA damage index. Doxorubicin 0.2 µg/mL was used as a positive control, and 1% dimethyl sulfoxide was used as a solvent control.

Reaction Conditions 15.62, 31.25, 62.5, and 125 µg/mL; 6h

Applications Coronaridine treatment increased DNA damage in Hep-2 cell line in a concentration-dependent manner.

Animal experiment [2]:

Animal models Male CD-1 albino mice

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Male CD-1 albino mice weighing approximately 22 to 25g at the beginning of the experiment were used in all experiments. Ten mice were housed in each cage (26 × 41cm). Animals were fed a standard laboratory diet and tap water *ad libitum* and maintained at 23±1°C on a 12-h day-night cycle with light at 7 am. Neuropathic pain was produced in mice (n=10/group) intermittently by intraperitoneal (i.p.) injection of 2.4mg/kg oxaliplatin (dissolved in 5% glucose solution) on days 1-3, 6-10, and 13-14. On day 15, a coronary contrast agent (Coronaridine) that induces antineuropathic pain was administered (p.o.) at the highest dose (72mg/kg), and a hole-plate test was performed 25 minutes later.

Preparation Method The device consisted of a 40cm square plane with 16 flush cylindrical holes (3cm in diameter) distributed in a 4×4 equispaced grid. Each mouse was placed in the center of the plate and allowed to move freely for 5min at a time. Two light beams passed from the midpoint of the plane to the midpoint on opposite sides, thus dividing the plane into four equal quadrants, automatically signaling the movement of the animal across the plate surface for a total time of 5min (i.e., spontaneous activity). Miniature photocells were present in each of the 16 wells, and the mice were recorded for a total of 5min of hole exploration time. Higher or lower exploratory activity compared with control animals indicates anxiolytic or anxiogenic activity of the drug, respectively.

Dosage form 72mg/kg for 25min; p.o.

Applications Coronaridine treatment decreased locomotor activity and reduced spontaneous mobility in mice.

References:

- [1] Rizo W F, Ferreira L E, Colnaghi V, et al. Cytotoxicity and genotoxicity of coronaridine from *Tabernaemontana catharinensis* A. DC in a human laryngeal epithelial carcinoma cell line (Hep-2) [J]. *Genetics and molecular biology*, 2013, 36: 105-110.
- [2] Arias H R, Tae H S, Micheli L, et al. Coronaridine congeners decrease neuropathic pain in mice and inhibit $\alpha 9\alpha 10$ nicotinic acetylcholine receptors and CaV2. 2 channels[J]. *Neuropharmacology*, 2020, 175: 108194.

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Background

Coronaridine is an inhibitor of TCF/ β -catenin, with an IC_{50} value of $5.8\mu M$ ^[1]. Coronaridine has been widely used in neurological function studies and in development of congeners^[2].

In vitro, Coronaridine showed potent cytotoxic activity in the laryngeal carcinoma cell line Hep-2, with an IC_{50} value of $54.47\mu g/mL$ after 24h treatment^[3]. Coronaridine treatment ($10\mu g/mL$; 24h) exhibited potent antileishmanial activity, suppressing promastigote and amastigote growth^[4].

In vivo, Coronaridine treatment ($72mg/kg$; p.o.) for 25 minutes produced a sedative effect and reduced spontaneous activity in Male CD-1 albino mice ^[5].

References:

- [1] Ohishi K, Toume K, Arai M A, et al. Coronaridine, an iboga type alkaloid from Tabernaemontana divaricata, inhibits the Wnt signaling pathway by decreasing β -catenin mRNA expression[J]. Bioorganic & medicinal chemistry letters, 2015, 25(18): 3937-3940.
- [2] Arias H R, Tae H S, Micheli L, et al. Coronaridine congeners decrease neuropathic pain in mice and inhibit $\alpha 9\alpha 10$ nicotinic acetylcholine receptors and CaV2. 2 channels[J]. Neuropharmacology, 2020, 175: 108194.
- [3] Rizo W F, Ferreira L E, Colnaghi V, et al. Cytotoxicity and genotoxicity of coronaridine from Tabernaemontana catharinensis A. DC in a human laryngeal epithelial carcinoma cell line (Hep-2)[J]. Genetics and molecular biology, 2013, 36: 105-110.
- [4] Delorenzi J C, Attias M, Gattass C R, et al. Antileishmanial activity of an indole alkaloid from Peschiera australis[J]. Antimicrobial Agents and chemotherapy, 2001, 45(5): 1349-1354.
- [5] Arias H R, Tae H S, Micheli L, et al. Coronaridine congeners decrease neuropathic pain in mice and inhibit $\alpha 9\alpha 10$ nicotinic acetylcholine receptors and CaV2. 2 channels[J]. Neuropharmacology, 2020, 175: 108194.

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