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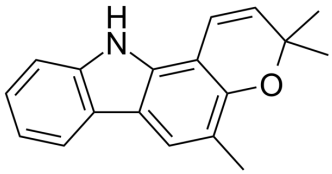
Girinimbine

Cat. No.:	HY-N9488
CAS No.:	23095-44-5
Molecular Formula:	$C_{18}H_{17}NO$
Molecular Weight:	263.33
Target:	Apoptosis; Bacterial; Parasite
Pathway:	Apoptosis; Anti-infection
Storage:	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



BIOLOGICAL ACTIVITY

Description

Girinimbine (Girinimbin) is a carbazole alkaloid with a variety of biological effects. Girinimbine can induce apoptosis, and has antitrypanosomal, antiplatelet activity, antibacterial activity, anti-inflammatory, antioxidant and antitumor activities[1][2][3].

In Vitro

Girinimbine (1-400 μM; 24-72 h) decreases the viability of HepG2 cells in 24, 48 and 72 h with IC_{50} values of 61 μM, 56 μM, and 40 μM respectively. Girinimbine (10-100 μM; 24-48 h) increase of LDH leakage in both concentration- and time-dependent manner in HepG2 cells[1].

Girinimbine (56 μM; 24-48 h) treatment results in DNA fragmentation and elevates levels of caspase-3 in HepG2 cells[1] .HepG2 cells[1].

Girinimbine (56 μM; 12-48 h) treatment also displays a time-dependent accumulation of the Sub-G0/G1 peak (hypodiploid) and caused G0/G1-phase arrest[1].

Girinimbine shows a potent antitrypanosomal activitywith an IC_{50} value of 10.16 μg/mL[3].

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

Cell Viability Assay[1]

Cell Line:	HepG2 cells
Concentration:	1 μM, 10 μM, 50 μM, 100 μM, 200 μM
Incubation Time:	24 h, 48 h and 72 h
Result:	Inhibited the proliferation of HepG2 cells in vitro in a dose- and time-dependent manner.

Apoptosis Analysis[1]

Cell Line:	HepG2 cells
Concentration:	56 μM
Incubation Time:	24 h, 48 h
Result:	Showed typical morphological features of apoptosis.

Cell Cycle Analysis[1]

Cell Line:	HepG2 cells
Concentration:	56 μM
Incubation Time:	12 h, 24 h, 48 h
Result:	Induced G0/G1-phase arrest in HepG2 cells.

In Vivo

Girinimbine (10-100 mg/kg; orally gavage; once) pretreatment helps limit total leukocyte migration, and reduced pro-inflammatory cytokine (IL-1β, TNF-α) levels in the peritoneal fluid[2].
In vivo in zebrafish embryos, Girinimbine (20 μg/mL; 24 hours) shows significant distribution of apoptotic cells in embryos[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male ICR mice (25-35 g) treated with carrageenan[2]
Dosage:	10 mg/kg, 30 mg/kg, and 100 mg/kg
Administration:	Orally gavage; once
Result:	Helped limit total leukocyte migration, and reduced pro-inflammatory cytokine levels in the peritoneal fluid.

REFERENCES

[1]. Suvitha Syam, et al. The growth suppressing effects of girinimbine on HepG2 involve induction of apoptosis and cell cycle arrest. Molecules. 2011 Aug 23;16(8):7155-70.

[2]. Venoos Iman, et al. Anticancer and anti-inflammatory activities of girinimbine isolated from Murraya koenigii. Drug Des Devel Ther. 2016 Dec 28;11:103-121.

[3]. H O Dyary, et al. Antitrypanosomal and cytotoxic activities of botanical extracts from Murraya koenigii (L.) and Alpinia mutica Roxb. Trop Biomed. 2019 Mar 1;36(1):94-102.

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