Decursin

Cat. No.: HY-18981

CAS No.: 5928-25-6

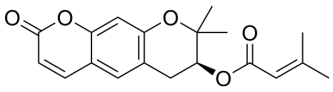
Molecular Formula: $C_{19}H_{20}O_5$

Molecular Weight: 328.36

Target: PKC; Apoptosis; CXCR

Pathway: Epigenetics; TGF-beta/Smad; Apoptosis; GPCR/G Protein; Immunology/Inflammation

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (152.27 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.0454 mL	15.2272 mL	30.4544 mL
	5 mM	0.6091 mL	3.0454 mL	6.0909 mL
	10 mM	0.3045 mL	1.5227 mL	3.0454 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.61 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.61 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.61 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Decursin ((+)-Decursin) is a potent anti-tumor agent. Decursin also is a cytotoxic agent and a potent protein kinase C activator. Decursin induces apoptosis and cell cycle arrest at G1 phase. Decursin decreases the expression of CDK2, CDK4, CDK6, cyclin D1 protein at 48 h. Decursin inhibits cell proliferation and migration. Decursin shows anti-tumor, anti-inflammatory and analgesic activities[1][2][3][4].

In Vitro

Decursin (0, 25, 50, 100 μM; 24, 28, 72, 96 h) inhibits cell growth in a dose- and time- dependent manner in DU145 cells[1].
Decursin (0, 25, 50, 100 μM; 24, 28, 72, 96 h) induces apoptosis and cell cycle arrest at G1 phase in DU145 cells, G1, S as well as G2-M arrests in PC-3 cells[1].
Decursin (0, 25, 50, 100 μM; 24, 48 h) decreases the expression of CDK2, CDK4, CDK6, cyclin D1 protein at 48 h in DU145 cells

[1].

Decursin (0, 5, 20, 100 μM; 7 days) inhibits the proliferation and differentiation ability of AC133+ cells[2].

Decursin (0, 5, 20, 100 μM) inhibits SDF-1a-induced activation of Akt, ERK1/2, and eNOS in a dose-dependent manner[2].

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

Cell Viability Assay[1]

Cell Line:	DU145 cells
Concentration:	0, 25, 50, 100 μM
Incubation Time:	24, 28, 72, 96 h
Result:	Showed a dose- and time- dependent inhibition cell growth with 22% to 51%, 21%to 68%, 9% to 72%, 42% to 90% growth inhibition after 24, 48, 72, and 96 hours oftreatment, respectively. And caused 15%-45% cell death.

Cell Cycle Analysis[1]

Cell Line:	DU145 cells
Concentration:	0, 25, 50, 100 μM
Incubation Time:	12-96 h
Result:	Caused 52%, 65%, and 78% DU145 cells in G1phase.

Western Blot Analysis[1]

Cell Line:	DU145 cells
Concentration:	0, 25, 50, 100 μM
Incubation Time:	24, 48 h
Result:	Did not show any any alteration inprotein levels of CDK2, CDK4, CDK6, cyclin D1, and cyclin E, but dose-dependent decreased in the expression of these proteins except cyclin E at 48 h.

In Vivo

Decursin (4 mg/kg; s.c.; daily for 4 weeks) shows anti-tumor activity in mouse[2].

Decursin (50 mg/kg; intrathecal injection; three times at 2-day intervals, for 6 days) shows analgesic ability in paclitaxel-induced peripheral neuropathy in mouse[3].

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

Animal Model:	C57BL/6J mice (LLC cells)[2]
Dosage:	4 mg/kg
Administration:	S.c.; daily for 4 weeks
Result:	Delayed tumor formation and dramatically decreased tumor growth by inhibition of angiogenesis through VEGFR-2 signaling pathway.

Animal Model:	Eight-week-old adult C57BL/6J male and female mice[3]
Dosage:	50 mg/kg

Administration:	Intrathecal injection; three times at 2-day intervals, for 6 days
Result:	Demonstrated the analgesic ability in the in vivo model of paclitaxel-induced peripheral neuropathy.

CUSTOMER VALIDATION

- Int Immunopharmacol. 2021 Apr 17;97:107657.

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REFERENCES

[1]. Yim D, et al. A novel anticancer agent, decursin, induces G1 arrest and apoptosis in human prostate carcinoma cells. Cancer Res. 2005 Feb 1;65(3):1035-44.

[2]. Jung SY, et al. Decursin inhibits vasculogenesis in early tumor progression by suppression of endothelial progenitor cell differentiation and function. J Cell Biochem. 2012 May;113(5):1478-87.

[3]. Son DB, et al. Decursin Alleviates Mechanical Allodynia in a Paclitaxel-Induced Neuropathic Pain Mouse Model. Cells. 2021 Mar 4;10(3):547.

[4]. Ahn KS, et al. Decursin: a cytotoxic agent and protein kinase C activator from the root of Angelica gigas. Planta Med. 1996 Feb;62(1):7-9.

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