Procyanidin C1

Cat. No.: HY-N2342

CAS No.: 37064-30-5

Molecular Formula: $C_{45}H_{38}O_{18}$

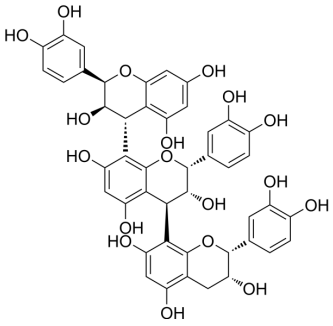
Molecular Weight: 866.77

Target: Apoptosis

Pathway: Apoptosis

Storage: 4°C, protect from light

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (115.37 mM; Need ultrasonic)

H_2O : 50 mg/mL (57.69 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.1537 mL	5.7685 mL	11.5371 mL
5 mM	0.2307 mL	1.1537 mL	2.3074 mL
10 mM	0.1154 mL	0.5769 mL	1.1537 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 6.25 mg/mL (7.21 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (2.88 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (2.88 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (2.88 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Procyanidin C1 (PCC1), a natural polyphenol with oral activity, causes DNA damage, cell cycle arrest and induces apoptosis. Procyanidin C1 decreases the level of Bcl-2, but enhances BAX, caspase 3 and 9 expression in cancer cells. Procyanidin C1 shows senotherapeutic activity and increases lifespan in mice[1][2].

IC_{50} & Target

IC50: 31.5 μg/mL (MCF-7), 36.6 μg/mL (MDA-MB-231)[1]

In Vitro

Procyanidin C1 (6.25-100 μg/mL; 48 h) shows cytotoxic activities to MCF-7 and MDA-MB-231 cells[1].
?Procyanidin C1 (35 μg/mL; 48 h) affects cell cycle of MCF-7 and MDA-MB-231 cancer cells[1].
?Procyanidin C1 significantly up-regulates Chk 1 and Chk 2 in MCF-7 and MDA-MB-231 cancer cells[1].
?Procyanidin C1 (27.85 and 66.41 μL) induces significant DNA damage in MCF-7 and MDA-MB-231 cancer cells[1].
?Procyanidin C1 (45 μg/mL; 72 h) reduces the expression level of Bcl-2 but increases the expression level of BAX, and increases activities of caspase 3 and 9 to induces cell apoptosis of MCF-7 and MDA-MB-231 cancer cells[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cycle Analysis[1]

Cell Line:	MCF-7 and MDA-MB-231 cell lines
Concentration:	35 μg/mL
Incubation Time:	48 h
Result:	Induced the cell cycle arrest at the S-phase in MCF-7 and MDA-MB-231 cell lines.

Cell Cytotoxicity Assay[1]

Cell Line:	MCF-7 and MDA-MB-231 cell lines
Concentration:	6.25-100 μg/mL
Incubation Time:	48 h
Result:	Inhibited cell proliferation of MCF-7 and MDA-MB-231 cells with IC_{50} values of 31.5 and 36.6 μg/mL and showed a higher cytotoxic activity to MDA-MB-231 than tamoxifen.

In Vivo

Procyanidin C1 (20 mg/kg; i.p.; 2 weeks after the first MIT dose and then delivered biweekly) increases tumour regression[2].
?Procyanidin C1 (20 mg/kg; i.p.; for 7 d) shows senolytic efficacy in mice with senescent mouse embryonic fibroblasts injection[2].
?Procyanidin C1 (20 mg/kg; p.o.; for 3 d) increases the lifespan of old mice[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Non-obese diabetes and severe combined immunodficiency mice with PSC27 and PC3 cancer cells injection, and pre-treated with mitoxantrone (MIT)[2]
Dosage:	20 mg/kg
Administration:	Intraperitoneal injection; 20 mg/kg; 2 weeks after the first MIT dose and then delivered biweekly
Result:	Remarkably enhanced tumour regression (55.2% reduction in tumour size compared with MIT alone; 74.9% reduction in tumour volume compared with the placebo treatment) and depleted the majority of senescent cells in chemotherapy treated animals.

Animal Model:	24-27 months of age mice (both sexes)[2]
Dosage:	20 mg/kg
Administration:	Oral gavage; 20 mg/kg; for three consecutive days
Result:	Enhanced the median post-treatment lifespan with 64.2% and decreased the mortality hazard than the vehicle-treated group.

CUSTOMER VALIDATION

- J Adv Res. 2023 Jul 20;S2090-1232(23)00199-6.
- Research Square Print. January 3rd, 2023.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Xu Q, et al. The flavonoid procyanidin C1 has senotherapeutic activity and increases lifespan in mice. Nat Metab. 2021 Dec;3(12):1706-1726.

[2]. Koteswari LL, et al. A comparative anticancer study on procyanidin C1 against receptor positive and receptor negative breast cancer. Nat Prod Res. 2019 Jan 8:1-8.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA