Polydatin

Cat. No.: HY-N0120A

CAS No.: 27208-80-6

Molecular Formula: $C_{20}H_{22}O_8$

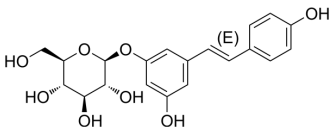
Molecular Weight: 390.38

Target: Autophagy; Apoptosis; Mitophagy

Pathway: Autophagy; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 29 mg/mL (74.29 mM)

H_2O : 0.1 mg/mL (0.26 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.5616 mL	12.8080 mL	25.6161 mL
5 mM	0.5123 mL	2.5616 mL	5.1232 mL
10 mM	0.2562 mL	1.2808 mL	2.5616 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 (6.40 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.40 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.40 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Polydatin (Piceid), extracted from the roots of Reynoutria japonica, a widely used traditional Chinese remedies, possesses anti-inflammatory activity in several experimental models. Polydatin (Piceid) inhibits G6PD and induces oxidative and ER stresses.

IC_{50} & Target

NF-κB, Autophagy

In Vitro	Polydatin protects cerebral cells from ischemic damages via improvement of microcirculation and inhibition of platelet aggregation. In addition, polydatin inhibits ICAM-1 expression in endothelial cells stimulated by lipopolysaccharide; it also attenuates adhesion between white blood cells and endothelial cells[1]. Polydatin inhibits cancer cell proliferation and cell cycle progression[4]. Polydatin induces ER stress-driven cell death[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Polydatin could significantly increase the activity of SOD and the heart rate, attenuate myocardial pathological damage, decrease MDA content, slightly increase arterial pressure and GSH-Px activity, reduce intervals of QRS, QT and ST, and lower FFA content[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [3]	The effect of polydatin on mMEC viability is evaluated with an MTT assay. mMECs are incubated in the presence or absence of various concentrations of polydatin (25, 50 and 100 μg/mL) and DEX (100 μg/mL) for 24 h. Next, 20 μL of MTT (5 mg/mL) is added to each well and incubated for 4 h. After the supernatants are removed and the formazan is dis¬solved with 150 μL of DMSO in each well, the optical density (OD) value is measured at 570 nm on a microplate reader[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2][3]	Rats: Rats are divided into six groups by random assignment and treated as follows: in normal group and polydatin control group: rats are administrated with CMC-Na and polydatin (200 μmol/kg) by gavage respectively, and given normal saline (NS) by tail intravenous (iv) injection with the same volume; in DOX group: rats are injected with DOX by cauda vein for 4 weeks (3 mg/kg per week), the cumulative dosage is 12 mg/kg similar to that in the research of Chang et al[2]. Mice: Polydatin is dissolved in dimethyl sulfoxide (DMSO) and diluted in Dulbecco's modified Eagle's medium (DMEM). Sixty adult female postpartum and lactating BALB/c mice (6–8 weeks old, weighing 35–40 g) are obtained. Control group (CG): The mice are treated with 100 μL of PBS as a vehicle control. Polydatin groups: 24h after S aureus infection, the mouse model of S aureus mastitis is intraperitoneally administered polydatin at 15, 30 and 45 mg/kg[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Int J Mol Sci. 2023 May 5, 24(9), 8265.
- J Ethnopharmacol. 2021 Jul 31;114479.
- Virology. 2023 Jun 21.
- Neurotox Res. 20 August 2022.
- Mol Med Rep. 2022 Jan;25(1):9.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Cheng Y, et al. Involvement of cell adhesion molecules in polydatin protection of brain tissues from ischemia-reperfusioninjury. Brain Res. 2006 Sep 19;1110(1):193-200.

[2]. Wang HL, et al. Synergistic effects of Polydatin and Vitamin C in Inhibiting Cardiotoxicity induced by Doxorubicin in rats. Fundam Clin Pharmacol. 2016 Nov 28. [Epub ahead of print]

[3]. Jiang KF, et al. Polydatin ameliorates Staphylococcus aureus-induced mastitis in mice via inhibiting TLR2-mediated activation of the p38 MAPK/NF-κB pathway. Acta Pharmacol Sin. 2016 Nov 28. [Epub ahead of print]

[4]. Luigi Mele, et al. A New Inhibitor of glucose-6-phosphate Dehydrogenase Blocks Pentose Phosphate Pathway and Suppresses Malignant Proliferation and Metastasis in Vivo. Cell Death Dis. 2018 May 1;9(5):572.

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