Paeonol

Cat. No.: HY-N0159

CAS No.: 552-41-0

Molecular Formula: $C_9H_{10}O_3$

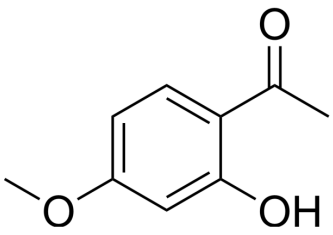
Molecular Weight: 166.17

Target: Monoamine Oxidase; Autophagy

Pathway: Neuronal Signaling; Autophagy

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

Ethanol : 50 mg/mL (300.90 mM; Need ultrasonic)

DMSO : ≥ 38 mg/mL (228.68 mM)

H_2O : < 0.1 mg/mL (ultrasonic) (insoluble)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	6.0179 mL	30.0897 mL	60.1793 mL
5 mM	1.2036 mL	6.0179 mL	12.0359 mL
10 mM	0.6018 mL	3.0090 mL	6.0179 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 (15.04 mM); Suspended solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (15.04 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (15.04 mM); Clear solution
4. Add each solvent one by one: 10% EtOH >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (15.04 mM); Clear solution
5. Add each solvent one by one: 10% EtOH >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (15.04 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Paeonol is an active extraction from the root of Paeonia suffruticosa, Paeonol inhibits MAO-A and MAO-B with IC_{50} of 54.6 μM and 42.5 μM, respectively.
IC_{50} & Target	IC50: 42.5 μM (MAO-B), 54.6 μM (MAO-A)[1]
In Vitro	Paeonol is found to be inhibitory against MAO A in a dose-dependent manner with IC_{50} value of 54.6 μM. Paeonol is shown to inhibit MAO-B in a dose-dependent manner with the IC_{50} of 42.5 μM. For Paeonol, the K_i is estimated to be 51.1 μM. The inhibition of Paeonol on MAO B is of competitive type with K_i value of 38.2 μM[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	The 200 mg/kg Paeonol+I/R group [AN/V (%): 7.6±2.2, p<0.01] and 100 mg/kg Paeonol+I/R group [AN/V (%): 9.4±2.8, p<0.05] both show lesser extents of no-reflow area in the ventricles compared with the I/R group [AN/V (%): 18.2±2.9]. In particular, the 200 mg/kg Paeonol + I/R group experienced markedly alleviated no-reflow in the whole heart [AN/WH (%): 4.6±1, p<0.05] compared with the I/R group [AN/WH (%): 10.0±1.9][2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [2]	Mice[2] Male Wistar rats (180-220 g, average age of 8 week) are randomly divided into four groups: (1) sham group, thoracotomy without left anterior descending coronary artery (LAD) occlusion or Paeonol pretreatment; (2) I/R group, LAD occlusion (ischemia) for 4 h followed by reperfusion for 8 h; (3) Paeonol (100 mg/kg)+I/R group, oral administration of 100 mg/kg Paeonol (1 mL/kg) for 7 days using a intragastric tube prior to I/R procedure; (4) Paeonol (200 mg/kg) + I/R group, oral administration of 200 mg/kg Paeonol (1 mL/kg) for 7 days using a intragastric tube prior to I/R procedure. In addition, rats in the sham and I/R groups received a dosage of DMSO equal to that with which the Paeonol was dissolved in for the other two groups. DMSO was also administered intragastrically for 7 consecutive days. A minimum of eight rats were assigned to each group. An ischemia group without reperfusion is not included since our present study mainly focuses on the effect of Paeonol on the cardiac injuries after reperfusion, which is closely related to the real-world situation of no-reflow after coronary revascularization. However, future studies may include a group subjected only to 4 h of ischemia to differentiate, in terms of damage to the cardiac function, which was due to the ischemia and which was due to the no-reflow. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Metabolites. 2022, 12(10), 956.
- J Inorg Biochem. 2022 Jan 24;230:111733.
- Biochem Biophys Res Commun. 2022 Feb 8;600:35-43.
- Exp Ther Med. November 25, 2021.

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REFERENCES

[1]. Kong LD, et al. Inhibition of MAO A and B by some plant-derived alkaloids, phenols and anthraquinones. J Ethnopharmacol. 2004 Apr;91(2-3):351-5.

[2]. Ma L, et al. Paeonol Protects Rat Heart by Improving Regional Blood Perfusion during No-Reflow. Front Physiol. 2016 Jul 21;7:298.

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

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