Syringaldehyde

Cat. No.: HY-N1390

CAS No.: 134-96-3

Molecular Formula: $C_9H_{10}O_4$

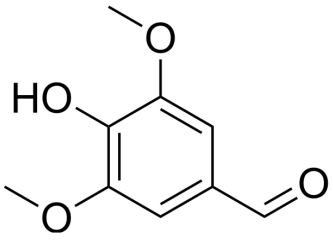
Molecular Weight: 182.17

Target: COX

Pathway: Immunology/Inflammation

Storage: 4°C, stored under nitrogen

* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (548.94 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	5.4894 mL	27.4469 mL	54.8938 mL
5 mM	1.0979 mL	5.4894 mL	10.9788 mL
10 mM	0.5489 mL	2.7447 mL	5.4894 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 (13.72 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (13.72 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (13.72 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Syringaldehyde is a polyphenolic compound belonging to the group of flavonoids and is found in different plant species like Manihot esculenta and Magnolia officinalis[1]. Syringaldehyde moderately inhibits COX-2 activity with an IC_{50} of 3.5 μg/mL[2]. Anti-hyperglycemic and anti-inflammatory activities[1].

IC_{50} & Target

COX-2

19.2 μM (IC_{50})

In Vitro

Syringaldehyde inhibits COX-2 activity in a dosedependent manner with an IC_{50} of 3.5 μg/mL[2].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Syringaldehyde exerts anti-hyperglycemic effect in rat model of diabetes induced by streptozotocin. Apart from antioxidant capability, Syringaldehyde also has anti-inflammatory activity as it is found to have inhibitory action on cyclo-oxygenase 2 (COX-2) in mouse macrophage cell line[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration	Rats[1] Adult male albino wistar rats (weighing 180-220 g) 12.5 mg/kg, 25 mg/kg, and 50 mg/kg; p.o.; for 21 days Adult male albino wistar rats are randomly divided into six groups (n=6), first group serves as control and receives vehicle (orally) for 21 days. Second group is given Syringaldehyde in saline orally at 50 mg/kg for 21 days. Third group receives vehicle for a period of 21 days and then ISO (100 mg/kg, s.c.) on 20th and 21 st day at an interval of 24 h. Fourth group is given Syringaldehyde for 21 days at 12.5 mg/kg, p.o. and ISO on 20th and 21 st day. Fifth group receives Syringaldehyde at concentration of 25 mg/kg, p.o. for 21 days and ISO on 20th and 21 st day. The sixth group is treated with 50 mg/kg of Syringaldehyde for 21 days and ISO on 20th and 21 st day. During the experimental procedure body weight of animals are monitored and on 22nd day, 24 h after second injection of ISO, rats sre sacrificed by cervical decapitation. Note: Body weight of animals belonging to different groups did not differed significantly but heart weight of ISO challenged animals were highly elevated ($p \leq 0.05$) than control rats. However, treatment of rats with Syringaldehyde significantly reduced heart weight in dose dependent way. The rats treated with Syringaldehyde alone displayed an insignificant difference from control group. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Shahzad S, et al. Protective effect of syringaldehyde on biomolecular oxidation, inflammation and histopathological alterations in isoproterenol induced cardiotoxicity in rats. Biomed Pharmacother. 2018 Dec;108:625-633.

[2]. Stanikunaite R, et al. Cyclooxygenase-2 inhibitory and antioxidant compounds from the truffle Elaphomyces granulatus. Phytother Res. 2009 Apr;23(4):575-8.

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