Salicin

Cat. No.: HY-N0149

CAS No.: 138-52-3

Molecular Formula: $C_{13}H_{18}O_7$

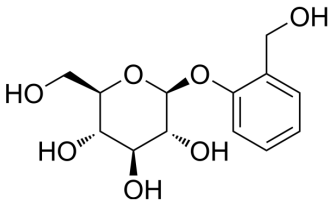
Molecular Weight: 286.28

Target: COX; Endogenous Metabolite

Pathway: Immunology/Inflammation; Metabolic Enzyme/Protease

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 150 mg/mL (523.96 mM; Need ultrasonic and warming)

H_2O : 12.5 mg/mL (43.66 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.4931 mL	17.4654 mL	34.9308 mL
5 mM	0.6986 mL	3.4931 mL	6.9862 mL
10 mM	0.3493 mL	1.7465 mL	3.4931 mL

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

BIOLOGICAL ACTIVITY

Description

Salicin is a natural COX inhibitor.

IC_{50} & Target

COX | Human Endogenous Metabolite

In Vitro

Significant down regulation of PGE2, the enzymatic product of COX2, to 76% in lysate and 70% in supernatant is observed with Salicin 10 μM treatment in COLO cells when compare to the COLO control. This is accompanied with a minimal COX1 inhibition to 91% of the CCD control on the genetic level. Treatment with Salicin 1 μM decreases colon cancer cell proliferation rates from 144% to 113% at 24 hours and 187% to 130% at 48 hours, with 10 μM decreasing proliferation rates to108% at 24 hours and 119% at 48 hours[1]. The concentrations of TNF-α, IL-1β and IL-6 of LPS-induced cells pretreated with 0.07, 0.14 and 0.28 μM Salicin are significant reduced compare with LPS group[2].

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

In Vivo

Salicin (D(-)-Salicin) (35, 70, 140 μM) markedly inhibits the LPS-induced pathological changes. MPO activity in LPS-induced lung tissue is significantly increased compare with control group. However, Salicin (35, 70, 140 μM) markedly inhibits this

	change. Pretreatment with Salicin inhibits LPS-induced activation of JNK, ERK, p38/MAPK and p65 in a dose-dependent manner[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	RAW264.7 mouse macrophage cell line is used in this study. RAW264.7 cells are mechanically scraped and plated at a density of 4×10^5 cells/mL onto 96-well plates in a 37°C, 5% CO_2 incubator for 1 h. Then the cells are treated with 50 μL Salicin (D(-)-Salicin) of different concentrations (0 to 0.28 μM) for 1 h, followed by stimulation with 50 μL Lipopolysaccharide (LPS) (4 μg/mL). After 18 h, 10 μL CCK-8 is added to each well and continued to incubate for 4 h. Then, the optical density is measured at 450 nm on a microplate reader[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2]	Mice are randomly divided into five groups, each containing three mice: Control, Lipopolysaccharide (LPS) only, LPS+Salicin (D(-)-Salicin) group is injected intraperitoneally with Salicin 35 μM, LPS+Salicin group is injected intraperitoneally with Salicin 70 μM, LPS+Salicin group is injected intraperitoneally with Salicin 140 μM. After 1 h, 10 μg LPS dissolved in 50 μL PBS is instilled intranasally to induce lung injury. Control mice are given 50 μL PBS without LPS. After 12 h LPS treatment, bronchoalveolar lavage fluid (BALF) is collected 3 times through a tracheal cannula with autoclaved PBS. Then, the tissue sample is centrifuged at 3000 rpm, for 10 min at 4°C[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell. 2021 Apr 1;184(7):1693-1705.e17.

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REFERENCES

[1]. Jun Yan He, et al. Salicin as a Multipurpose Therapeutic Approach for Colon Cancer.

[2]. Li Y, et al. D(-)-Salicin inhibits the LPS-induced inflammation in RAW264.7 cells and mouse models. Int Immunopharmacol. 2015 Jun;26(2):286-94.

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