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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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Fumaric acid

Cat. No.: HY-W015883

CAS No.: 110-17-8

Molecular Formula: $C_4H_4O_4$

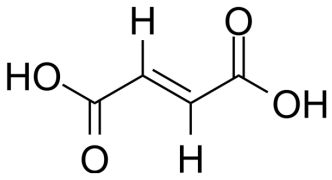
Molecular Weight: 116.07

Target: Endogenous Metabolite; NF-κB; p38 MAPK

Pathway: Metabolic Enzyme/Protease; NF-κB; MAPK/ERK Pathway

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 : 25 mg/mL (215.39 mM; Need ultrasonic)

H_2O : 11.11 mg/mL (95.72 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	8.6155 mL	43.0775 mL	86.1549 mL
	5 mM	1.7231 mL	8.6155 mL	17.2310 mL
	10 mM	0.8615 mL	4.3077 mL	8.6155 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 8.33 mg/mL (71.77 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description

Fumaric acid is an unsaturated dicarbonic acid, an intermediate product of the citric acid cycle that provides intracellular energy in the form of ATP. Fumaric acid exerts anti-inflammatory effects by inhibiting the NF-κB signaling pathway dependent on p38 MAPK. Fumaric acid can be used in the study of pregnancy-induced hypertension[1][2][3].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

Fumaric acid (50 μM, 24 h) inhibits p38 MAPK-dependent NF-κB signaling pathway and decreases the expression of eotaxin-1 in TNF-α-stimulated fibroblasts[2].

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

Western Blot Analysis[2]

Cell Line:	NIH/3T3
Concentration:	50 μM
Incubation Time:	24 h
Result:	Inhibited p38 MAPK and IκB-a phosphorylation. Attenuated TNF-a-induced NF-κB and decreased the expression of CCR3. Reduced the NF-κB activation induced by TRADD, TRAF2, and MEKK3.

In Vivo

Fumaric acid (10 mL/kg, intravenously injected) is used to treat gestational hypertension by down-regulating the expression of KCNMB1 and TET1[3].

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

Animal Model:	Gestational hypertension rat model[3]
Dosage:	10 mL/kg
Administration:	i.v.
Result:	Downregulated the levels of TET1 and KCNMB1.

CUSTOMER VALIDATION

- Gut Microbes. 2023 Jan-Dec;15(1):2186114.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Roh KB, et al. Fumaric acid attenuates the eotaxin-1 expression in TNF-α-stimulated fibroblasts by suppressing p38 MAPK-dependent NF-κB signaling. Food Chem Toxicol. 2013 Aug;58:423-31.

[2]. Zhou Y, et al. Fumaric acid and succinic acid treat gestational hypertension by downregulating the expression of KCNMB1 and TET1. Exp Ther Med. 2021 Oct;22(4):1072.

[3]. Whelan DT, et al. Fumaric aciduria: a new organic aciduria, associated with mental retardation and speech impairment. Clin Chim Acta. 1983 Aug 31;132(3):301-8.

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