S-1-Propenyl-L-cysteine

Cat. No.: HY-111827

CAS No.: 52438-09-2

Molecular Formula: $C_6H_{11}NO_2S$

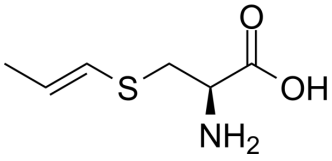
Molecular Weight: 161.22

Target: Others; Histamine Receptor

Pathway: Others; GPCR/G Protein; Immunology/Inflammation; Neuronal Signaling

Storage: 4°C, stored under nitrogen

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : 2.6 mg/mL (16.13 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	6.2027 mL	31.0135 mL	62.0270 mL
	5 mM	1.2405 mL	6.2027 mL	12.4054 mL
	10 mM	0.6203 mL	3.1014 mL	6.2027 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 5 mg/mL (31.01 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description

S-1-Propenyl-L-cysteine is a stereoisomer of S-allyl-l-cysteine, extracted from garlic, with immunomodulatory effects and reduces blood pressure in a hypertensive animal model[1]. S-1-Propenyl-L-cysteine exhibits antioxidative efficacy through a NO-dependent BACH1 signaling pathway[2]. S-1-Propenyl-L-cysteine is orally active.

In Vitro

S-1-Propenyl-L-cysteine NO-dependently upregulates levels of HMOX1, which causes the downregulation of BACH1, leads to a BACH1-degradation in nucleus[2].
S-1-Propenyl-L-cysteine inhibits lipopolysaccharides (LPS)-induced TLR4 signaling pathway by inducing MyD88 degradation through its denaturation and the activation of autophagy[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

RT-PCR[2]

Cell Line:	HUEVCs

Concentration:	0-50 μM
Incubation Time:	24 h
Result:	Increased expression of HMOX1 and decreased levels of BACH1 with prescence of NOR3.

Western Blot Analysis[4]

Cell Line:	splenic lymphocytes
Concentration:	0.3 mM
Incubation Time:	20 min
Result:	Increased levels of pAMPK, decreased levels of p-IRAK4 and NF-kB p65.

In Vivo

S-1-Propenyl-L-cysteine (6.5 mg/kg, p.o.) reduces systolic blood pressure (SBP), alters histidine metabolism and exerts the antihypertensive effect via the central histamine H3 receptor in spontaneously hypertensive rats[3].

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

Animal Model:	spontaneously hypertensive rats (SHR) [3]
Dosage:	6.5 mg/kg
Administration:	p.o., single dosage
Result:	Reduced blood pressure and produced a change in metabolites. Increased histidine levels after 1.5-3 h after administration.

CUSTOMER VALIDATION

- Food Funct. 2023 Apr 17.
- Food Sci Biotechnol. 2022 Jan 23;31(2):253-260.
- Anal Methods. 2023 Jan 5.

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REFERENCES

[1]. Tsuneyoshi T, et al., S-1-Propenylcysteine augments BACH1 degradation and heme oxygenase 1 expression in a nitric oxide-dependent manner in endothelial cells. Nitric Oxide. 2019 Mar 1;84:22-29.

[2]. Matsutomo T, et al., Metabolomic study reveals the acute hypotensive effect of S-1-propenylcysteine accompanied by alteration of the plasma histidine level in spontaneously hypertensive rats. J Pharm Biomed Anal. 2019 May 10;168:148-154.

[3]. Suzuki JI, et al., Anti-inflammatory action of cysteine derivative S-1-propenylcysteine by inducing MyD88 degradation. Sci Rep. 2018 Sep 20;8(1):14148.

[4]. Kodera Y, et al. Chemical and Biological Properties of S-1-Propenyl-l-Cysteine in Aged Garlic Extract. Molecules. 2017 Mar 31;22(4).

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

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