γ-L-Glutamyl-L-alanine

Cat. No.: HY-112171

CAS No.: 5875-41-2

Molecular Formula: $C_8H_{14}N_2O_5$

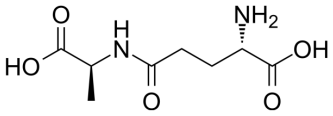
Molecular Weight: 218.21

Target: Endogenous Metabolite; CaSR

Pathway: Metabolic Enzyme/Protease; GPCR/G Protein

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 50 mg/mL (229.14 mM)

DMSO : < 1 mg/mL (insoluble or slightly soluble)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.5827 mL	22.9137 mL	45.8274 mL
5 mM	0.9165 mL	4.5827 mL	9.1655 mL
10 mM	0.4583 mL	2.2914 mL	4.5827 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (458.27 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

γ-L-Glutamyl-L-alanine, composed of gamma-glutamate and alanine, is a proteolytic breakdown product of larger proteins. γ-L-Glutamyl-L-alanine is a natural substrate of the γ-Glutamylcyclotransferase. γ-L-Glutamyl-L-alanine is a positive modulator of calcium-sensing receptor (CaR) function[1][2][3][4].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

γ-L-Glutamyl-L-alanine (γ-Glu-Ala) shows the potency for $Ca^{2+}{}_i$ mobilization in CaR (calcium-sensing receptor)-expressing HEK-293 cells, with an EC_{50} of 4.8 μM[3].

γ-L-Glutamyl-L-alanine shows the potency for $Ca^{2+}{}_i$ mobilization in human parathyroid cells with an EC_{50} of 13.9 μM[3].

γ-L-Glutamyl-L-alanine (20 μM) suppress PTH secretion from normal human parathyroid cells[3].

γ-L-Glutamyl-L-alanine is a substrate for glutaminase B[4].

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

CUSTOMER VALIDATION

- Blood Adv. 2022 Feb 10;bloodadvances.2021006816.

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REFERENCES

[1]. York MJ, et al. gamma-Glutamylcyclotransferase: inhibition by D-beta-aminoglutaryl-L-alanine and analysis of the solvent kinetic isotope effect. Eur J Biochem. 1989 Sep 1;184(1):97-101.

[2]. Broadhead GK, et al. Allosteric modulation of the calcium-sensing receptor by gamma-glutamyl peptides: inhibition of PTH secretion, suppression of intracellular cAMP levels, and a common mechanism of action with L-amino acids. J Biol Chem. 2011 Mar 18;286(11):8786-97.

[3]. Tatsuo Yamamoto, et al. Further Characterization of Glutaminase Isozymes from Pseudomonas aeruginosa.

[4]. Ovchinnikova OG, et al. Structure of a polysaccharide from Providencia rustigianii O11 containing a novel amide of 2-acetamido-2-deoxygalacturonic acid with L-glutamyl-L-alanine. Carbohydr Res. 2012 Feb 15;349:95-102.

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