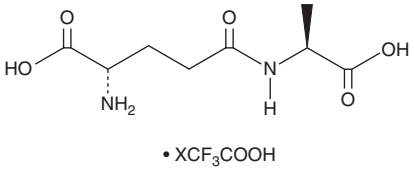
PRODUCT INFORMATION

γ-Glu-Ala (trifluoroacetate salt)

Item No. 36688

Formal Name:	L-γ-glutamyl-L-alanine, trifluoroacetate salt
Synonyms:	γ-Glutamylalanine, γ-L-Glutamyl-L-alanine
MF:	$C_8H_{14}N_2O_5 \bullet XCF_3COOH$
FW:	218.2
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

γ-Glu-Ala (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the γ-Glu-Ala (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. γ-Glu-Ala (trifluoroacetate salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of γ-Glu-Ala (trifluoroacetate salt) in these solvents is approximately 16, 5, and 3 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of γ-Glu-Ala (trifluoroacetate salt) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of γ-Glu-Ala (trifluoroacetate salt) in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

γ-Glu-Ala is an endogenous kokumi dipeptide composed of L-glutamic acid (Item No. 30377) and L-alanine (Item No. 29757) that has been found in *P. roqueforti*.[1] It has also been found in several ripened cheeses, including Gouda, goat, and Milner cheeses. γ-Glu-Ala is a positive allosteric modulator of the calcium-sensing receptor (CaSR; EC_{50} = 4.8 µM in CaSR-expressing HEK293 cells).[2] It induces glutathionuria in mice when administered at a dose of 4 mmol/kg.[3] Plasma levels of γ-Glu-Ala are increased in malnourished neonatal mice.[4] Increased serum levels of γ-Glu-Ala are positively associated with an increased risk of chronic kidney disease.[5]

References

1. Toelstede, S. and Hofmann, T. Kokumi-active glutamyl peptides in cheeses and their biogeneration by Penicillium roquefortii. *J. Agric. Food Chem.* **57(9)**, 3738-3748 (2009).
2. Broadhead, G.K., Mun, H.-C., Avlani, V.A., *et al.* Allosteric modulation of the calcium-sensing receptor by γ-glutamyl peptides: Inhibition of PTH secretion, suppression of intracellular cAMP levels, and a common mechanism of action with L-amino acids. *J. Biol. Chem.* **286(11)**, 8786-8797 (2011).
3. Anderson, M.E. and Meister, A. Inhibition of γ-glutamyl transpeptidase and induction of glutathionuria by γ-glutamyl amino acids. *Proc. Natl. Acad. Sci. USA* **83(14)**, 5029-5032 (1986).
4. Preidis, G.A., Keaton, M.A., Campeau, P.M., *et al.* The undernourished neonatal mouse metabolome reveals evidence of liver and biliary dysfunction, inflammation, and oxidative stress. *J. Nutr.* **144(3)**, 273-281 (2014).
5. Kim, H., Yu, B., Li, X., *et al.* Serum metabolomic signatures of plant-based diets and incident chronic kidney disease. *Am. J. Clin. Nutr.* **116(1)**, 151-164 (2022).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM