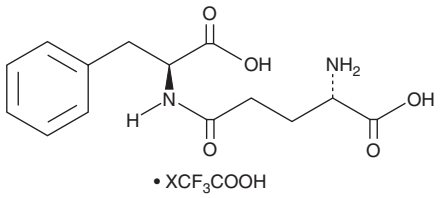
PRODUCT INFORMATION

γ-Glu-Phe (trifluoroacetate salt)

Item No. 36181

Formal Name:	L-γ-glutamyl-L-phenylalanine, trifluoroacetate salt
Synonym:	γ-Glutamylphenylalanine
MF:	$C_{14}H_{18}N_2O_5 \bullet XCF_3COOH$
FW:	294.3
Purity:	≥98%
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-Phe (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the γ-Glu-Phe (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. γ-Glu-Phe (trifluoroacetate salt) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of γ-Glu-Phe (trifluoroacetate salt) in these solvents is approximately 3 and 2 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-Phe (trifluoroacetate salt) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of γ-Glu-Phe (trifluoroacetate salt) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

γ-Glu-Phe is an endogenous dipeptide that is composed of L-glutamic acid (Item No. 30377) and L-phenylalanine (Item No. 31498) and has also been found in *Allium*.[1] It prevents increases in lipid accumulation in AML12 hepatocytes stimulated with oleic acid (Item Nos. 90260 | 24659) when used at a concentration of 30 µM. γ-Glu-Phe (2.5-10 mM) increases levels of the calcium-sensing receptor (CaSR) and secretion of cholecystokinin (CCK) and glucagon-like peptide 1 (GLP-1) in STC-1 enteroendocrine cells.[2] Changes in urine levels of γ-Glu-Phe are associated with hypertension and phenylketonuria (PKU) and changes in serum levels are associated with prostate cancer.[3-5]

References

1. Lee, Y.G., Cho, J.-Y., Hwang, E.J., *et al.* Glu-Phe from onion (*Allium Cepa* L.) attenuates lipogenesis in hepatocytes. *Biosci. Biotech. Biochem.* **81(7)**, 1409-1416 (2017).
2. Yang, J., Bai, W., Zeng, X., *et al.* γ-$[Glu]_{(n=1,2)}$-Phe/-Met/-Val stimulates gastrointestinal hormone (CCK and GLP-1) secretion by activating the calcium-sensing receptor. *Food Funct.* **10(7)**, 4071-4080 (2019).
3. Shi, M., He, J., Li, C., *et al.* Metabolomics study of blood pressure salt-sensitivity and hypertension. *Nutr. Metab. Cardiovasc. Dis.* **32(7)**, 1681-1692 (2022).
4. Peck, H. and Pollitt, R.J. The occurrence of γ-glutamylphenylalanine in the urine of newborn phenylketonurics. *Clin. Chim. Acta* **94(3)**, 237-240 (1979).
5. Huang, J., Mondul, A.M., Weinstein, S.J., *et al.* Serum metabolomic profiling of prostate cancer risk in the prostate, lung, colorectal, and ovarian cancer screening trial. *Br. J. Cancer* **115(9)**, 1087-1095 (2016).

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