# γ-Glu-Phe

**Cat. No.:** HY-101399

**CAS No.:** 7432-24-8

**Molecular Formula:** $C_{14}H_{18}N_2O_5$

**Molecular Weight:** 294.3

**Sequence:** γ-Glu-Phe

**Sequence Shortening:** γ-EF

**Target:** Endogenous Metabolite

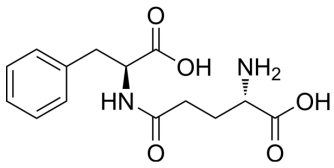
**Pathway:** Metabolic Enzyme/Protease

**Storage:** Sealed storage, away from moisture

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)




## SOLVENT & SOLUBILITY

**In Vitro**

$H_2O$ : ≥ 50 mg/mL (169.89 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Mass / Solvent / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 3.3979 mL | 16.9895 mL | 33.9789 mL |
| 5 mM | 0.6796 mL | 3.3979 mL | 6.7958 mL |
| 10 mM | 0.3398 mL | 1.6989 mL | 3.3979 mL |

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

## BIOLOGICAL ACTIVITY

**Description**

γ-Glu-Phe (γ-Glutamylphenylalanine) is synthesized by Bacillus amyloliquefaciens (GBA) and Aspergillus oryzae (GAO). γ-Glu-Phe or the post-enzymatic reaction mixture enhances the umami intensity of commercial soy sauce and model chicken broth[1].

| $IC_{50}$ & Target | Microbial Metabolite | Human Endogenous Metabolite |
|---|---|---|

**In Vitro**

γ-Glu-Phe, γ-Glu-Met and γ-Glu-Val, are identified in sourdough by liquid chromatography-tandem mass spectrometry in MRM mode. γ-Glutamyl dipeptides are found in higher concentrations in sourdough fermented with L. reuteri when compared to the chemically acidified controls. Proteolysis is an important factor for generation of γ-glutamyl dipeptides. Sensory evaluation of bread reveals that sourdough bread with higher concentrations of γ-glutamyl dipeptides ranks higher with respect to the taste intensity when compared to regular bread and type I sourdough bread. Sourdough breads fermented with L. reuteri LTH5448 and L. reuteri 100-23 differ with respect to the intensity of the salty taste; this difference

corresponds to a different concentration of γ-glutamyl dipeptides[2].

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

## REFERENCES


[1]. Zhao CJ, et al. Synthesis of Taste-Active γ-Glutamyl Dipeptides during Sourdough Fermentation by Lactobacillus reuteri. J Agric Food Chem. 2016 Oct 12;64(40):7561-7568.

[2]. Yang J, et al. Synthesis and Sensory Characteristics of Kokumi γ-$[Glu]_n$-Phe in the Presence of Glutamine and Phenylalanine: Glutaminase from Bacillus amyloliquefaciens or Aspergillus oryzae as the Catalyst. J Agric Food Chem. 2017 Oct 4;65(39):8696-8703.

[3]. Zhao CJ, et al. Synthesis of Taste-Active γ-Glutamyl Dipeptides during Sourdough Fermentation by Lactobacillus reuteri. J Agric Food Chem. 2016 Oct 12;64(40):7561-7568.





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