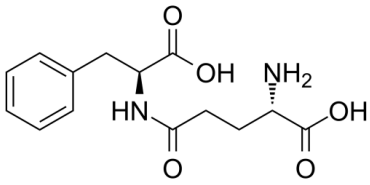
Data Sheet

Product Name:	γ-Glu-Phe
Cat. No.:	CS-6416
CAS No.:	7432-24-8
Molecular Formula:	$C_{14}H_{18}N_2O_5$
Molecular Weight:	294.30
Target:	Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Solubility:	H2O : ≥ 50 mg/mL (169.89 mM)



BIOLOGICAL ACTIVITY:

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]. **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].

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.

CAIndexNames:

L-Phenylalanine, L-γ-glutamyl-

SMILES:

OC([C@@H](NC(CC[C@H](N)C(O)=O)=O)CC1=CC=CC=C1)=O

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

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