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The development of knowledge regarding the characteristics of the proteose peptone fraction of milk: Techno-functional and biological properties. A review [Évolution des connaissances sur les fonctionnalités de la fraction protéose-peptone du lait: Propriétés techno-fonctionnelles et biologiques (synthèse bibliographique)]

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Abstract

The total proteose-peptone fraction (TPP) is defined as a heat-stable soluble fraction of milk, representing about 10% of the whey protein. TPP is divided into two classes according to its origin. The first class consists of proteolysis fragments of the β -casein from the N-terminal region. These are non-hydrophobic fractions, which are the highly soluble β -CN-5P (f1-105/107); β -CN-4P (f1-28) and β -CN-1P (f29-105/107) respectively called PP5 (14.3 kDa), PP8S (9.9 kDa), and PP8F (4 kDa). The second class includes the hydrophobic fractions of glycoproteins, whose major constituents are a glycoprotein LP28, the highly hydrophobic glycoprotein LP18 and a hydrophobic peptide with apparent Mr, respectively 28 kDa, 18 kDa and 11 kDa. TPP has numerous interesting characteristics such as techno-functional properties (emulsifying and foaming actions) and biological properties (lipolysis inhibition and antimicrobial activities), making TPP usable as a potential functional ingredient for industry. In addition, these functional properties are partly governed by the major components including glycoproteins, such as LP28, due to their hydrophobic nature.

Author Keywords

Biological properties; Glycoproteins; Milk; Peptides; Proteose-peptones; Technical properties