

عنوان مقاله:

Extraction and Purification Technology for Bioactive Peptide from Microalgae

محل انتشار:

دوازدهمین همایش سراسری کشاورزی و منابع طبیعی پایدار (سال: 1402)

تعداد صفحات اصل مقاله: 41

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خلاصه مقاله:

In recent years, researchers have focused on functional ingredients, functional foods, and nutraceuticals due to the rapidly increasing interest in bioactive components, especially in bioactive peptides. Microalgae proteins are a rich and balanced source of amino acids and their derived bioactive peptides, which possess biological and physiological properties. Bioactive peptides are specific peptide motifs of 2-20 amino acids embedded in parent proteins that possess the ability to alter or influence metabolic activities in the human body because of their particular fragments in proteins. Bioactive peptides offer several biological functionalities such as free radicals' inhibition, thrombosis inhibition, and immunity improvement. There are two main methods of bioactive peptides production by microbial fermentation and enzymatic hydrolysis of proteins. A wide range of bioactive peptides can be produced using different cleavage specificities of the proteolytic enzymes. Usually, bioactive peptides consist of less than 20 amino acids and 10 kDa molecular weight. Their functionalities also depend upon the sequence of amino acids, their compositions, and molecular weights. Microalgae proteins contain several peptides that exert strong biological properties and are widely studied as a source of bioactive peptides. Many studies have reported the availability of bioactive peptides in Microalgae, this review also describes various manufacturing techniques for microalgae bioactive peptides using organic synthesis, microwave assisted extraction, chemical hydrolysis, and enzymes hydrolysis. Finally, purification of marine bioactive peptides is described, including gel or size exclusion chromatography, ion-exchange column chromatography, and reversed-phase high performance liquid chromatography, which are aimed at finding a fast, simple, and effective method to obtain the target peptides.

کلمات کلیدی:

,bioactive peptide, microalgae, hydrolysates, protein extraction, functional foods, Purification, Enzymatic hydrolysis

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