

Recent advances in food biopeptides: production, biological functionalities and therapeutic applications

Abstract

The growing momentum of several common life-style diseases such as myocardial infarction, cardiovascular disorders, stroke, hypertension, diabetes, and atherosclerosis has become a serious global concern. Recent developments in the field of proteomics offering promising solutions to solving such health problems stimulates the uses of biopeptides as one of the therapeutic agents to alleviate disease-related risk factors. Functional peptides are typically produced from protein via enzymatic hydrolysis under *in vitro* or *in vivo* conditions using different kinds of proteolytic enzymes. An array of biological activities, including antioxidative, antihypertensive, antidiabetic and immunomodulating has been ascribed to different types of biopeptides derived from various food sources. In fact, biopeptides are nutritionally and functionally important for regulating some physiological functions in the body; however, these are yet to be extensively addressed with regard to their production through advance strategies, mechanisms of action and multiple biological functionalities. This review mainly focuses on recent biotechnological advances that are being made in the field of production in addition to covering the mode of action and biological activities, medicinal health functions and therapeutic applications of biopeptides. State-of-the-art strategies that can ameliorate the efficacy, bioavailability, and functionality of biopeptides along with their future prospects are likewise discussed.

Keyword: Functional peptides; Enzymatic hydrolysis; Protein hydrolysates; Penetration routes; Peptides bioavailability; Multiple biological activities; Antioxidative; Antihypertensive; *In vitro* and *in vivo* assessments