1. Record Nr. UNINA9910132305603321 Applied food protein chemistry / / edited by Zeynep Ustunol Titolo Chichester, West Sussex:,: John Wiley & Sons, Inc.,, 2015 Pubbl/distr/stampa **ISBN** 1-118-86058-6 1-118-86059-4 1-118-86061-6 Descrizione fisica 1 online resource (526 p.) Disciplina 664/.07 Soggetti Proteins in human nutrition Food - Protein content Food - Analysis Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Includes index. Applied Food Protein Chemistry; Contents; About the Editor; List of Nota di contenuto Contributors: Scientific Review Panel; Preface; Acknowledgments: Part I Protein Properties; 1 Introduction to Food Proteins; 2 Overview of Food Proteins; 2.1 Overview of food proteins; 2.1.1 Section I. Protein properties; 2.1.2 Section II. Plant proteins; 2.1.3 Section III. Animal proteins; 2.2 Projected needs for the future; Reference; 3 Amino Acids, Peptides, and Proteins; 3.1 Introduction; 3.2 Amino acids; 3.2.1 Derived amino acids and conjugated proteins; 3.3 Peptides, oligopeptides, polypeptides, proteins 3.3.1 Protein structure 3.3.2 Forces involved in stability of proteins; 3.4 Conclusion; References; 4 Physical, Chemical, and Processing-Induced Changes in Proteins; 4.1 Introduction; 4.2 Protein denaturation; 4.2.1 Physical denaturants; 4.2.2 Chemical denaturants; 4.3 Chemical modification of proteins; 4.3.1 Acylation; 4.3.2 Alkylation; 4.3.3 Glycosylation; 4.3.4 Phosphorylation; 4.3.5 Sulfitolysis; 4.4 Enzymatic modification of proteins; 4.4.1 Hydrolysis by proteases; 4.4.2 Crosslinking by transglutaminase; 4.4.3 Plastein reaction; 4.5 Processing-

induced changes in food proteins

4.5.1 Heat processing4.5.2 High-pressure processing; 4.5.3 Pulsed electric field processing; 4.5.4 Texturization; 4.6 Oxidizing agents; 4.7

Conclusion; References; 5 Functional Properties of Food Proteins; 5.1 Introduction; 5.2 Interfacial properties; 5.2.1 Factors affecting interfacial properties; 5.2.2 Experimental approaches to measuring interfacial properties of proteins; 5.3 Proteins as structure formers leading to aggregation and network formation; 5.3.1 Factors affecting protein aggregation; 5.3.2 Protein structures caused by interactions with polysaccharides

5.3.3 Experimental approaches in the study of structure formation 5.4 Binding properties of food proteins: 5.5 Conclusions and outlook: References; 6 Biologically Active Peptides from Foods; 6.1 Introduction; 6.2 Production of bioactive peptides; 6.3 Bioactive peptides in health and disease; 6.3.1 Antihypertensive peptides; 6.3.2 Food-derived sources of antihypertensive peptides; 6.3.3 Antioxidant peptides; 6.3.4 Hypocholesterolemic peptides; 6.3.5 Anticancer peptides; 6.3.6 Antimicrobial peptides; 6.3.7 Immunomodulatory peptides; 6.3.8 Mineral-binding peptides; 6.3.9 Opioid peptides 6.3.10 Anti-obesity peptides6.4 Application and development of bioactive peptides; 6.4.1 Bioactive peptides absorption and in vivo activity; 6.4.2 Safety concerns of bioactive peptides; 6.5 Conclusion; References; 7 Protein and Peptide-Based Antioxidants; 7.1 Introduction: 7.2 Background: 7.3 Classes of natural antioxidants: 7.3.1 Herb and spice extracts; 7.3.2 Tocopherols; 7.3.3 Ascorbic acid; 7.3.4 Proteins and peptides; 7.4 Conclusions; References; 8 Nutritional Aspects of Proteins; 8.1 Introduction; 8.2 Evaluation of protein quality; 8.2.1 Measuring protein digestibility 8.2.2 The digestible indispensable amino acid score

Sommario/riassunto

Food proteins are of great interest, not only because of their nutritional importance and their functionality in foods, but also for their detrimental effects. Although proteins from milk, meats (including fish and poultry), eggs, cereals, legumes, and oilseeds have been the traditional sources of protein in the human diet, potentially any proteins from a biological source could serve as a food protein. The primary role of protein in the diet is to provide the building materials for the synthesis of muscle and other tissues, and they play a critical role in many biological processes. They are