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Nota di contenuto	SECTION 1: CHEMISTRY OF PHENOLIC ANTIOXIDANTS -- Ch 1: Concept of Antioxidant -- Introduction to Antioxidant -- Types of antioxidants -- Mechanism of Antioxidant Reaction -- Estimation of Antioxidant Activity -- Phenolic Antioxidants -- Nomenclature of phenolic compounds -- Ch 2: Chemistry of Phenolic Antioxidants -- Classification -- Phenolic acids -- Phenolic aldehydes and alcohols -- Phenolic esters -- Cinnamic acid amides -- Lignans and lignin -- Tannins -- Coumarins -- Flavonoids -- Glycosides -- Ch 3: Phenolic Antioxidants in Foods -- Phenolic antioxidants in fruits -- Phenolic antioxidants in Vegetables -- Phenolic antioxidants in Cereals and legumes -- Phenolic antioxidants in Beverages -- Phenolic antioxidants in Edible Oil -- SECTION 2: BIOCHEMISTRY OF PHENOLIC ANTIOXIDANTS -- Ch 4: Biosynthesis of Phenolic Antioxidants -- Biosynthesis of Phenolic acids -- Biosynthesis of Phenolic aldehydes and alcohols -- Biosynthesis of Phenolic esters -- Biosynthesis of Cinnamic acid amides -- Biosynthesis of Lignans and lignin -- Biosynthesis of Tannins -- Biosynthesis of Coumarins -- Biosynthesis of Flavonoids -- Biosynthesis of Glycosides -- Ch 5: Metabolism of Phenolic Antioxidants. -- Ingestion of phenolic antioxidants -- Digestion and absorption -- Phenolic antioxidants in Bloodstream --

Interactions with Proteins -- Interactions with Carbohydrates -- Ch 6: Pharmacological Effects of Phenolic Antioxidants -- Pharmacological significance -- Oxidative stress & Phenolic antioxidants -- Aging & Phenolic antioxidants -- Health & Diseases -- Ch 7: Molecular Mechanism of Phenolic Antioxidants -- Basic Mechanism -- In-vitro studies -- In-vivo studies -- SECTION 3: ANALYSIS OF PHENOLIC ANTIOXIDANTS -- Ch 8: Basics in Analysis of Phenolic Antioxidants -- Extraction of phenolic compounds -- Spectrophotometric analysis -- Titrimetric methods -- Electrochemical methods -- Ch 9: Chromatography of Phenolic Antioxidants -- Thin layer chromatography -- Liquid chromatography -- Gas chromatography -- Ch 10: Spectroscopy of Phenolic Antioxidants -- Mass spectrometry -- Nuclear Magnetic resonance spectroscopy -- Near-infrared spectroscopy. .

Sommario/riassunto

Plant foods are an essential part of our daily diet and constitute one of the highest contributors to the world economy. These foods are rich in phenolic compounds, which play a significant role in maintaining our health. This textbook presents a comprehensive overview of the chemistry, biochemistry and analysis of phenolic compounds present in a variety of foods. The text can be used as a singular source of knowledge for plant food science and technology, covering all of the important chemical, biochemical and analytical aspects needed for a thorough understanding of phenolic antioxidants in foods. Phenolic Antioxidants In Foods: Chemistry, Biochemistry, and Analysis is comprised of three sections. The first section covers the basic concepts of antioxidants, their chemistry and their chemical composition in foods, providing a detailed introduction to the concept. The second section covers the biochemical aspects of phenolic antioxidants, including their biosynthetic pathways, biological effects and the molecular mechanism of antioxidant effects in the biological system. This section promotes an understanding of the fundamental biochemical reactions that take place in foods and after digestion and absorption. The third section covers the analytical chemistry used in the analysis of phenolic antioxidants in foods, including the basic analytical procedures, methods for analysis and chromatographic and spectroscopic analyses. This section is significant for aspiring food chemists and manufacturers to evaluate the nature and chemistry of phenolic antioxidants in foods. Featuring helpful quizzes, section summaries, and key chapter points, this textbook is the perfect learning tool for advanced chemistry undergraduates and post-graduates looking to gain a fundamental understanding of phenolic antioxidants in food products. .