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Nota di contenuto	Part I. Chemical Characteristics -- Chapter 1. The Structure of Oxysterols Determines their Behavior at Phase Boundaries – Implications for Model Membranes and Structure-Activity Relationships -- Chapter 2. Association of ABCG5 and ABCG8 Transporters with Sitosterolemia -- Part II. Bio- and Chemical- Synthesis, and Analytical Methods -- Chapter 3. Chemical and Biochemical Features of Spinasterol and Schottenol -- Chapter 4. LC-MS Approaches for Oxysterols in Various Biosamples -- Chapter 5. Mass Spectrometry Imaging of Cholesterol and Oxysterols -- Part III. Implication in Aging and Human Diseases -- Chapter 6. Oxysterols in Central and Peripheral Synaptic Communication -- Chapter 7. Oxysterols in Infectious Diseases -- Chapter 8. The Cholesterol-5,6-Epoxide Hydrolase: A Metabolic Checkpoint in Several Diseases -- Chapter 9. Impact of Oxysterols in Age-Related Disorders and Strategies to Alleviate Adverse

Effects -- Chapter 10. Enzymatically Formed Oxysterols and Cell Death -- Chapter 11. Oxysterols in Vascular Cells and Role in Atherosclerosis -- Chapter 12. Implication of Oxysterols and Phytosterols in Aging and Human Diseases -- Chapter 13. Sterols in Inflammatory Diseases: Implications and Clinical Utility -- Chapter 14. Role of Oxysterols in Ocular Degeneration Mechanisms and Involvement of P2X7 Receptor -- Chapter 15. 24S-Hydroxycholesterol in Neuropsychiatric Diseases: Schizophrenia, Autism Spectrum Disorder and Bipolar Disorder -- Part IV. Biomarkers Therapeutic and Industrial Applications -- Chapter 16. Oxysterols as Biomarkers of Aging and Disease -- Chapter 17. The Diagnostic Use of the Plasma Quantification of 24S-Hydroxycholesterol and Other Oxysterols in Neurodegenerative Disease -- Chapter 18. Oxy- and Phytosterols as Biomarkers: Current Status and Future Perspectives -- Part V. Pharmacological Applications -- Chapter 19. Therapeutic Applications of Oxysterols and Derivatives in Age-Related Diseases, Infectious and Inflammatory Diseases, and Cancer -- Part VI. Industrial Aspects -- Chapter 20. Current and New Insights on Delivery Systems for Plant Sterols in Food -- Chapter 21. In vitro Evaluation of the Effects of 7-Ketocholesterol and 7-Hydroxycholesterol on the Peroxisomal Status: Prevention of Peroxisomal Damages and Concept of Pexotherapy -- Chapter 22. Phytosterols: Potential Therapeutic Effects and Challenges in Food Industry.

Sommario/riassunto

This book provides basic knowledge of the biology, chemistry, and function of oxysterols and its derivatives as well as of phytosterols in numerous human diseases. The book is divided into six sections and begins with an introduction to the biological and chemical properties of oxysterols and its derivatives as well as phytosterols, their synthesis, and the methods currently used for their detection in various biospecimens. The following section discusses in detail the various effects of oxysterols on numerous human diseases, including infectious diseases, inflammatory and autoimmune diseases, atherosclerosis, and cancer, as well as neurological and neuropsychiatric disorders. Importantly, the potential of oxysterols as biomarkers for some of these diseases is also highlighted. The book concludes with an outlook on the pharmacological and nutritional effects of oxysterols and phytosterols and their potential use by the food, and pharmaceutical industries. Aiming to provide an in-depth overview of the biological and the chemical properties of oxysterols and phytosterols and their implications for human health, this book will be of interest to basic and clinical scientists, as well as to anyone working in the food or pharmaceutical industry who is exploring the potential of oxysterols and phytosterols.