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Nota di contenuto	Section 1: Introduction of Alzheimer’s Disease -- Chapter 1: Alzheimer’s disease and drug targets -- Chapter 2: Oxidative stress and metals in Alzheimer’s disease -- Chapter 3: Neuroinflammation in Alzheimer’s disease -- Section 2: Biomarkers and Diagnosis in Alzheimer’s Disease -- Chapter 4: Biomarkers of Alzheimer’s disease -- Chapter 5: Naturally inspired fluorescent organic molecules as diagnostic and theranostic tools in Alzheimer’s disease -- Chapter 6: Nanostructure-based molecules as diagnostic and theranostic tools in AD -- Section 3: Drug derivatives: A strategy for new multifunctional drug development for Alzheimer’s Disease -- Chapter 7: Approved cholinesterase inhibitors-based derivatives: Synthesis and their biological evaluation -- Chapter 8: Memantine-based derivatives: Synthesis and their biological evaluation -- Section 4: Natural molecules inspired novel derivatives for Alzheimer’s Disease -- Chapter 9: Huperzine-based derivatives: Design, synthesis, and anti-Alzheimer activity -- Chapter 10: Polyphenol: Development of polyphenol-inspired derivatives targeting pathological factors of AD -- Chapter 11: Flavonoid-based derivatives for modulating various targets of Alzheimer’s disease -- Chapter 12: Vitamin-based derivatives for the management of Alzheimer’s disease -- Section 5: Metal dyshomeostasis: A hypothesis for developing drugs for the treatment of Alzheimer’s disease --

Chapter 13: Metal chelators as a potential therapeutic agent for Alzheimer’s disease -- Chapter 14: Ferroptosis modulators: A potential therapeutic target in Alzheimer’s disease -- Section 6. Natural products/Synthetic molecules as epigenetic modulators in Alzheimer’s disease -- Chapter 15. Sirtuin modulator: Design, synthesis, and biological evaluation -- Chapter 16. Histone deacetylase Inhibitors: Design, synthesis, and biological evaluation.

Sommario/riassunto

This book illustrates the importance of natural products as the source for the development of novel drugs for the treatment of neurodegenerative disorders, including Alzheimer's disease. It also highlights the role of reactive oxygen species and altered metal homeostasis in the progression of Alzheimer’s disease and examines the potential of antioxidants and anti-chelating agents in the clinical intervention of neurodegenerative diseases. The book also discusses the role of neuroinflammation in the pathogenesis of Alzheimer’s disease. The chapters provide information about the drug targets, progress in the development of natural product-based therapeutics, biomarkers, fluorescent diagnostic tools, and theranostic for Alzheimer's disease. The book also provides information about the design and synthesis of natural product-based derivatives against the various targets of Alzheimer's disease including epigenetic targets and the metal dyshomeostasis hypothesis. Cutting across different disciplines, this book is a valuable source for neuroscientists, chemical biologists, pharmaceutical researchers, and synthetic biologists.