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Nota di contenuto	Chapter 1. Microbial metabolomics: a futuristic approach in biotechnology -- Chapter 2. Microbial metabolomics: development, applications and future prospects -- Chapter 3. Microbial metabolite databases -- Chapter 4. Integrating Metabolomics with Omics Techniques: Exploring Cutting-Edge Technologies in Comprehensive Biological Analysis -- Chapter 5. Metabolic Modeling and Flux Analysis: Intersections with Other Omics Techniques- Chapter 6. Role of Proteomics, Genomics, and Transcriptomics in the Utilization of Synthetic Biology Tools for Successful Metabolic Engineering Projects- Chapter 7. Uncovering Pathogen Metabolism: A Key to Infectious Disease Mitigation"- Chapter 8. Integrating Metabolomics with Next-Generation Approaches for Mitigating Emerging Pathogens- Chapter 9. Microbial metabolomics for nutraceutical developments and their applications- Chapter 10. Exploring synergies of Microbial Metabolomics with other omics techniques: Enhancing Drug Discovery

and Pharmaceutical Production.-Chapter 11. Metabolomics in food fermentations and designing functional foods -- Chapter 12. Metabolomics for plant growth promoting microbe profiling and designing biofertilizer -- Chapter 13. Microbial Metabolomics for pest management: leads and flaws -- Chapter 14. Omics for Thriving Plant-Microbiomes: Growing Food Security for a Sustainable Future -- Chapter 15. Metabolomics in understanding and mitigating metal toxicity -- Chapter 16. Artificial intelligence and machine learning in microbial degradation of pollutants and toxins -- Chapter 17. Ethical implications and Regulatory frameworks for microbial products and processes -- Chapter 18. Microbial contributions to a circular economy -- Chapter 19. Clinical Application of Metabolomics in Infectious Diseases and Future Perspectives -- Chapter 20. Advancing Fish Nutrition Research Through Metabolomics: Unveiling and Optimizing Nutritional Pathways.

Sommario/riassunto

This book explores the potential of microbial metabolism in health, agriculture, and environmental technologies, serving as a comprehensive guide to microbial metabolomics with practical applications. It uncovers the complex biochemical processes of microbes, from bacteria to fungi, revealing their impact on biotechnology, environmental sciences, healthcare, and agriculture. Microbes, the unseen drivers of biological processes, offer innovative solutions across these fields. The book examines the rapid advancements in microbial metabolomics and addresses challenges like data integration and metabolite identification, providing insights to unlock its full potential. It caters to the growing demand for advanced resources in microbiology and biotechnology, making it valuable for researchers, students, and professionals in microbiology, biotechnology, and biochemistry, as well as innovators in food security and green technology.
