1. Record Nr. UNINA9910817295603321

Titolo	Fungal biomolecule : sources, applications, and recent developments / / editors, Dr. Vijai Kumar Gupta, Prof. Robert L. Mach, Prof. S. Sreenivasaprasad
Pubbl/distr/stampa	Chichester, West Sussex : , : John Wiley & Sons, , 2015 ©2015
ISBN	1-118-95832-2 1-118-95831-4 1-118-95830-6
Descrizione fisica	1 online resource (415 p.)
Disciplina	579/.17
Soggetti	Biofilms Fungal enzymes - Research Aspergillus - Research
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Title Page; Copyright Page; Contents; Contributors; Foreword; Preface; Section 1 Fungi as cell factories; Chapter 1 Fungal biofilms: An overview; 1.1 Biofilm: Definition and basic concepts; 1.2 Fungi and fungal biofilms; References; Chapter 2 Fungal biomolecules for the food industry; 2.1 Introduction; 2.2 Enzymes; 2.3 Citric acid and other organics; 2.4 Exopolysaccharides; 2.5 Flavours and aromas; 2.6 Engineering of biomolecules; 2.7 Concluding remarks; Acknowledgements; References; Chapter 3 Fungal biocatalysts in the textile industry: Whole-cell systems in real textile wastewater treatment 3.1 Introduction3.2 Fungal degradation in axenic conditions; 3.3 Real textile wastewaters; 3.4 Scale-up to large-volume reactors; 3.5 Immobilization of fungal biomass; 3.6 Fungal treatment integration in existing WWTPs; 3.7 Conclusion; References; Chapter 4 Discovery of fungal enzymes and pathways; 4.1 Applications of fungal enzymes; 4.2 Importance of elucidating fungal biosynthetic pathways; 4.3 Modern bioprospecting; 4.4 Outlook; References; Chapter 5 Fungal laccase in the textile industry; 5.1 Introduction; 5.2 Fungal laccases

5.3 Potential applications of fungal laccases in the textile industry5.4 Major hurdles to further development from laboratory trials; References; Section 2 Production of recombinant peptides; Chapter 6 Lignocellulose-degrading enzymes: An overview of the global market; 6.1 Introduction; 6.2 The global market for industrial enzymes; 6.3 Lignocellulose-degrading enzymes; 6.4 The biorefinery concept for lignocellulose-degrading enzymes; 6.5 Final remarks; References; Chapter 7 Recent advancements in the role of volatile organic compounds from fungi; 7.1 Definition and classification of VOCs
7.2 Chemotaxonomy of fungal VOCs7.3 Role of VOCs in fungal growth and development; 7.4 Fungal VOCs in microbial interactions; 7.5 VOCs in fungal-plant interactions; 7.6 Fungal VOCs in multitrophic interactions; 7.7 Concluding remarks; Acknowledgements; References; Chapter 8 Peptaibiotics and peptaibols from fungi; 8.1 Introduction; 8.2 Alamethicin, the most extensively studied peptaibol; 8.3 Nomenclature and classification of peptaibols and peptaibiotics; 8.4 Fungi producing peptaibiotics; 8.5 Non-ribosomal biosynthesis of peptaibiotics; 8.6 Regulation of biosynthesis of peptaibiotics
8.7 Properties and biological activities of peptaibiotics8.8 Conclusions; Acknowledgements; References; Section 3 Fungal secondary metabolites and synthesis; Chapter 9 Biosynthesis of silver nanoparticles by fungi; 9.1 Introduction; 9.2 Synthesis of silver NPs; 9.3 Physicochemical characterization of silver NPs; 9.4 Conclusions; References; Chapter 10 Fungal biomolecules as modulators of growth and pathogenesis; 10.1 Introduction; 10.2 Fungal biomolecules: Various potential applications and need for identification of novel bioactive molecules using innovative strategies
10.3 Fungal biomolecules: Role in inter-species chemical communication and impact on ecological balance

Sommario/riassunto

Fungi have an integral role to play in the development of the biotechnology and biomedical sectors. The fields of chemical engineering, Agri-food,Biochemical, pharmaceuticals, diagnostics and medical device development allemploy fungal products, with fungal biomolecules currently used in a wide range of applications, ranging from drug development to food technology and agricultural biotechnology. Understanding the biology of different fungi in diverse ecosystems, as well as their biotropic interactions with other microorganisms, animals and plants, is essential to underpin effective and innov