

Contents

Contributors	ix
Foreword	xiii
Preface	xvii
Section 1 Fungi as cell factories	1
Chapter 1 Fungal biofilms: An overview <i>Virginia Medeiros de Siqueira</i>	3
Chapter 2 Fungal biomolecules for the food industry <i>Quang D. Nguyen, Erika Bujna, Gabriella Styevkó, Judit M. Rezessy-Szabó and Ágoston Hoschke</i>	11
Chapter 3 Fungal biocatalysts in the textile industry: Whole-cell systems in real textile wastewater treatment <i>Federica Spina, Valeria Tigrini, Valeria Prigione and Giovanna Cristina Varese</i>	39
Chapter 4 Discovery of fungal enzymes and pathways <i>Aleksandra Mitrovic and Anton Glieder</i>	51
Chapter 5 Fungal laccase in the textile industry <i>Susana Rodríguez-Couto</i>	63
Section 2 Production of recombinant peptides	73
Chapter 6 Lignocellulose-degrading enzymes: An overview of the global market <i>Paula M. D. Jaramillo, Helder A. R. Gomes, Antonielle V. Monclaro, Caio O. G. Silva and Edivaldo X. F. Filho</i>	75
Chapter 7 Recent advancements in the role of volatile organic compounds from fungi <i>Lourdes Macías-Rodríguez, Hexon Ángel Contreras-Cornejo, Jesús Salvador López-Bucio and José López-Bucio</i>	87
Chapter 8 Peptaibiotics and peptaibols from fungi <i>Susanne Zeilinger</i>	101

Section 3	Fungal secondary metabolites and synthesis	115
Chapter 9	Biosynthesis of silver nanoparticles by fungi <i>Ana Olívia de Souza and Alexandre Gomes Rodrigues</i>	117
Chapter 10	Fungal biomolecules as modulators of growth and pathogenesis <i>Rajesh N. Patkar and Naweed I. Naqvi</i>	137
Chapter 11	Fungi as a source of antitumour agents <i>Shin Yee Fung and Nget Hong Tan</i>	145
Chapter 12	Fungal mycotoxins: An overview <i>Svetlana V. Malysheva, José Diana Di Mavungu and Sarah De Saeger</i>	153
Chapter 13	Fungal pigments: An overview <i>Marcela C. Pagano and Partha P. Dhar</i>	173
Chapter 14	An overview regarding bioherbicide and their production methods by fermentation <i>Rodrigo Klaic, Raquel C. Kuhn, Edson L. Foletto, Valéria Dal Prá, Rodrigo J. S. Jacques, Jerson V. C. Guedes, Helen Treichel, Altemir J. Mossi, Débora Oliveira, J. Vladimir Oliveira, Sérgio L. Jahn and Marcio A. Mazutti</i>	183
Section 4	Regulation of fungal secondary metabolism	201
Chapter 15	The role of nutrients in fungal development and pathogenesis <i>YiZhen Deng, Fan Yang and Naweed I. Naqvi</i>	203
Chapter 16	Role of nitrogen sources in regulation of fungal secondary metabolism <i>Bidisha Sharma and Dhruva Kumar Jha</i>	213
Chapter 17	Regulatory genes in fungal secondary metabolism <i>Jaswinder Kaur and Catherine Collins</i>	225
Chapter 18	Fungal metabolic diversity <i>Andrei Stecca Steindorff, Gabriela F. Persinoti, Valdirene Neves Monteiro and Roberto Nascimento Silva</i>	239
Chapter 19	Secreted biomolecules in fungal plant pathogenesis <i>Neil Andrew Brown and Kim E. Hammond-Kosack</i>	263

Section 5	Developments and advancements	311
Chapter 20	Fungal molecular taxonomy: An overview	313
	<i>Marcela C. Pagano and Luiz H. Rosa</i>	
Chapter 21	Fungal biomolecules in wines and beer industries	323
	<i>Carlos Roberto Felix and Eliane Ferreira Noronha</i>	
Chapter 22	Biosorption and bioaccumulation of Chromium VI by different fungal species	333
	<i>Dhara Shukla and Padma S. Vankar</i>	
Chapter 23	Fungal biomolecules in plant growth promotion	345
	<i>Hexon Angel Contreras-Cornejo, Lourdes Macías-Rodríguez and José López-Bucio</i>	
Chapter 24	Fungal biomolecules and their implications	363
	<i>Andleeb Zehra, Manish Kumar Dubey, Arti Tiwari, Mukesh Meena, Punam Kumari, Vivek Kumar Singh, Vijai Kumar Gupta and R. S. Upadhyay</i>	
Index		377