Microbial Biotechnology

An Interdisciplinary Approach

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Foreword

The book *Microbial Biotechnology: An Interdisciplinary Approach*, edited by Dr. Pratyoosh Shukla, covers some of the latest applications of microorganisms from a practical point of view. The field of microbial biotechnology, in the context of the so-called cell factories, is of great interest and the number of groups involved in such projects is growing exponentially.

Although the book chapters cover different aspects of microbial biotechnology, I want to highlight two of them. The first refers to the field of functional foods; several chapters deal with the production of probiotics and prebiotics, and their effect on gastrointestinal health. The second topic is microbial bioremediation, which is exemplified in this book by the use of microbes to clean up mining sites and by the optimization of wastewater treatments. Other issues having a significant impact are also addressed in the book: for example, the use of microbial enzymes in pulp and paper industries, the different applications of exopolysaccharides, or the latest developments in medical biotechnology, among others.

In summary, there is no doubt about the interest of the contents displayed in this book. I am sure that the book *Microbial Biotechnology: An Interdisciplinary Approach* will provide the scientific community with great benefits for the coming years.

Francisco Plou
Research Scientist at Spanish CSIC
Honorary Professor at Autonomous University of Madrid
Madrid, April 4, 2016

Preface

The book describes the interdisciplinary scope of biotechnology and discoveries thereof. This book briefs the reader on various novel and innovative ideas of emerging biotechnology. The key features are described below to highlight the important contents of the book:

1. The book envisages the recent ideas of novel findings in microbiology.
2. It also provides insights into various interdisciplinary research avenues.
3. There are very few books available covering the diversity of topics described in this book.
4. Some key areas of modern biotechnology are also covered in this book, which are not available in any such books in the market.
5. Enhanced and simplified descriptions are the key components of this book, which provide unique benefits to its readers.

This book will also act as an important means of information on researchers working in interdisciplinary areas of research. The chapters outlined in this book cater to the needs of researchers working in the areas of bacterial exopolysaccharides, microalgal proteomics, applications of microbial L-asparaginases, novel aspects of bioremediation, probiotics and their impact on society, microbial community analysis in wastewater treatment techniques, etc. The book focuses on describing the above-mentioned aspects and on diversifying the understanding of microbial biotechnology to an expanded level.

This book will be a valuable resource to senior undergraduate and graduate students, researchers, professionals, and other interested individuals or groups working in the areas mentioned in the book.

Pratyoosh Shukla, PhD
December 2016
Rohtak, India

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CHAPTER 1

Bacterial Exopolysaccharides

Major Types and Future Prospects

Aparna Banerjee and Rajib Bandopadhyay

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