Preface

The idea of writing a book on "**Biosurfactants of Lactic Acid Bacteria**" struck us instantaneously after I was enrolled as a Ph.D. scholar in Microbiology and start working on biosurfactants derived from lactic acid bacteria. After five years of research related to the biosurfactants obtained from lactic acid bacteria, I and my mentor decided to compile all the information as a small compendium on "Biosurfactants of Lactic Acid Bacteria." And we found Springerbrief series as the most appropriate way to publish our compendium. The prompt and positive response from the Springer team through their valuable suggestions and timely contributions are gratefully appreciated. The book consists of 7 chapters on different aspects; each one represents the progress, prospect, and challenges in biosurfactant of lactic acid bacteria research. This is supposed to be the most up-to-date book on "Biosurfactants of Lactic Acid Bacteria." We attempt not only to highlight the remarkable progress made by the scientific community in this field of research, but also to critically examine the lacuna to expand the commercial prospects of these wonder biomolecules.

The term biosurfactant refers to those compounds that have surface tension active properties, the molecules that reduce interfacial tension. The chemical composition of biosurfactants can vary widely, but they have in common their amphiphilic or amphipathic nature. These features make biosurfactants advantageous in a wide variety of industrial formulations based on their capabilities to lower surface tensions, increase solubility, their detergency power, wetting ability, and foaming capacity. First, biosurfactants are considered environmentally "friendly" since they are moderately nontoxic and biodegradable. Second, biosurfactants have exceptional structures that are just starting to be cherished for their potential applications to industrial biotechnology to environmental cleanup. This "Biosurfactants of Lactic Acid Bacteria" book covers the current knowledge and the most recent advances in the field of microbial biosurfactants. The book includes the physicochemical properties of biosurfactants, their role in the physiology of the microbe that produced them, the biosynthetic pathway for their production, including the genetic regulation, and their potential biotechnological applications.

I thankfully acknowledge all the co-authors of each chapter of the book for their valuable and inspiring contributions, especially my Mentor “Dr. Baljeet Singh Saharan” for giving me this opportunity. I do highly appreciate the help that I have constantly received from my colleagues at Springer Germany and India. I also thank my loving wife, Deepti Singh, for her constant support and patience. I also thank my research students, particularly Gurkiran Parmar, Sakshi Sood, Harsimran Kaur, Sonali, and Sandeep Singh, for their technical support, understanding, and forbearance.

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