Preface

Quorum sensing is a process of bacterial cooperative behavior that has an effect on gene regulation. This cell-cell communication system involves the production of signaling molecules according to cell density and growth stage. Virulence, the ability to infest a habitat and cause disease, is also governed by such communication signals. This volume considers quorum sensing as a way to discover new antibiotics, and gain improved knowledge of the microbial world.

This book also provides different approaches on the study of the quorum sensing mechanism and its biotechnological application in several fields (biomaterial design, drug delivery, marine biofilm, etc.). It contributes to the understanding of the molecular basis that regulates this mechanism and describes new findings in fields of application. It is a handbook useful for researchers working in the fields of microbiology, environmental and food sciences, marine biology, and chemistry who already investigate quorum sensing, or beginners would like to learn more about this exciting field of study.

The book is organized in four sections (1. General: Chemistry and Microbiology; 2. Interkingdom Communication; 3. Quorum Sensing Inhibition; 4. Applications) covering the chemistry of signal molecules, the most recent outcomes from *extremophiles*, interkingdom communication in plants and humans, different molecules as quorum sensing inhibitors, and some examples of biotechnological studies.

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Giuseppina Tommonaro, Editor