Pseudomonas
Pseudomonas

Edited by Juan-Luis Ramos, CSIC, Granada, Spain

Volume 1: Genomics, Life Style and Molecular Architecture
Volume 2: Virulence and Gene Regulation
Volume 3: Biosynthesis of Macromolecules and Molecular Metabolism
Volume 4: Molecular Biology of Emerging Issues
Volume 5: A Model System in Biology
It all began 20 years ago when Jack Sokatch first published his outstanding contribution entitled *The Biology of Pseudomonas* back in 1986. This incursion into the world of *Pseudomonas* was followed by two books published by the American Society of Microbiology containing the presentations of the *Pseudomonas* meetings held in Chicago in 1989 and Trieste in 1991. The earlier volume was edited by Simon Silver, Al Chakrabarty, Barbara Iglewski and Sam Kaplan and the latter by Enrica Galli, Simon Silver and Bernard Witholt.

Back in 2002 we believed that the time was ripe for a new series of books on *Pseudomonas* due to its current importance in human and plant pathogenesis, biofilms, soil and rhizosphere colonization, etc. After a meeting with Kluwer (now Springer) in August 2002 during the XI IUMS conference in Paris (France), it was decided to take on such an endeavour. In less than a year from that meeting, the first three volumes of the *Pseudomonas* series saw the light thanks to a group of outstanding scientists in the field, who after devoting much of their valuable time, managed to complete their chapters under the guidance of Juan L. Ramos, who acted as Editor.

To ensure the high standard of each chapter, renowned scientists participated in the reviewing process. The three books collected part of the explosion of new vital information on the genus *Pseudomonas* grouped under the generic titles of “Vol. I. *Pseudomonas*: Genomics, Life Style and Molecular Architecture”, Vol. II. *Pseudomonas*: Virulence and gene regulation; Vol. III. *Pseudomonas*: Biosynthesis of Macromolecules and Molecular Metabolism.

A rapid search for articles containing the word *Pseudomonas* in the title in the last 10 years produced over 6000 articles! Consequently, not all possible topics relevant to this genus were covered in the three first volumes. A new volume was therefore due. *Pseudomonas* volume IV edited...
by Roger Levesque and Juan L. Ramos came into being with the intention of collecting some of the most relevant emerging new issues that had not been dealt with in the three previous volumes. This volume was arranged after the *Pseudomonas* meeting organized by Roger Levesque in Quebec (Canada). It dealt with various topics grouped under a common heading: “*Pseudomonas*: Molecular Biology of Emerging Issues”.

Yet the *Pseudomonas* story was far from being complete and a new volume edited by Juan L. Ramos and Alain Filloux was deemed to be necessary. This fifth volume has been conceived with the underlying intention of collecting new information on the genomics of saprophytic soil *Pseudomonas*, as well as the functions related to genomic islands. *Pseudomonas* are ubiquitous inhabitants and this new volume explores some fascinating biodegradative properties of soil and water *Pseudomonas* and their life styles and sheds further light on the wide metabolic potential of this group of microbes. This volume also explores how *Pseudomonas* responds and reacts to environmental signals, including detection of cell density in one of the most sophisticated quorum-sensing systems. It also explores issues related to pathogenesis and gene regulation.

Chapters in *Pseudomonas* volume 5 have been grouped under the following topics: Genomics, Physiology and Metabolism, Databases, Gene Regulation, Pathogenesis, and Catabolism and Biotransformations. The chapters under the heading Genomics constitute an in-depth analysis of the genome of *Pseudomonas fluorescens* and the organization of glycosylation islands in *Pseudomonas aeruginosa*. The Physiology and Metabolism section collects five chapters that deal with the catabolic potential of *Pseudomonas* against certain xenobiotic compounds (styrene, xylenes, carbazole), a naturally abundant chemical, such as phenylacetic acid, and how *Pseudomonas* reacts to stress at the membrane level. The section on Databases collects the current information on the collection of mini-Tn5 mutants of *Pseudomonas putida* kept in Granada (Spain). Under Gene Regulation we find several chapters dealing with quorum sensing, analysis of the family of two-component systems and their role in *Pseudomonas*. One of the chapters focuses on the biophysical approaches necessary to understand regulator/effecter interactions. The section on Pathogenesis includes an exciting chapter dealing with the mechanisms of internalization of a pathogen such as *P. aeruginosa*, and finally under Catabolism and Biotransformations we have grouped the current existing knowledge on histidine catabolism and biosynthesis of polyhydroxyalkanoates.

It would not be fair not to acknowledge that this fifth volume would never have seen the light if it were not for a group of outstanding scientists in the field who have produced enlightening chapters to try to complete the story that began with the four previous volumes of the series. It has been an honour for us to work with them and we truly thank them.
The review process has also been of great importance to ensure the high standards of each chapter. Renowned scientists have participated in the review, correction and editing of the chapters. Their assistance is immensely appreciated. We would like to express our most sincere gratitude to:

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Juan-Luis Ramos and Alain Filloux
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