

Bacillus

Cellular and Molecular Biology (2nd edition)

Edited by: **Peter Graumann** (*University of Freiburg, Germany*)

xii + 398 pp, February 2012 ISBN: 978-1-904455-97-4 \$360/£180

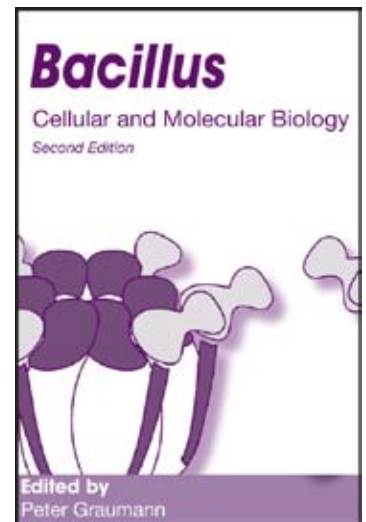
Published by: **Caister Academic Press**

www.caister.com

Bacillus subtilis has become widely adopted as a model organism for laboratory studies and is one of the best understood prokaryotes in terms of molecular and cellular biology. Its superb genetic amenability and relatively large size have provided powerful tools to investigate a bacterium in all possible aspects.

Extensively revised and updated, the new edition of this valuable reference work provides a comprehensive and up-to-date analysis of the current knowledge and new research in *Bacillus* molecular and cellular biology. Under the expert guidance of the editor Peter Graumann, renowned authors from around the world have contributed critical reviews on the most recent and topical research. Subjects covered include chromosome replication, DNA repair, chromosome segregation, cell division, transcription and translation, RNA-mediated regulation, general and regulatory proteolysis, the actin-like MreB cytoskeleton, the membrane proteome, the cell wall, endospore formation, biofilms, multicellularity and social behaviour, competence and transformation.

An essential book for anyone interested in *Bacillus* and an important reference volume for those working in fields as diverse as medicine, biotechnology, agriculture, food and industry. A recommended book for all microbiology laboratories.



Reviews of the first edition:

"a valuable resource of recent data" ([Doodys](#))

"a most comprehensive and authoritative account on the latest research ... a must read " ([Internat. Microbiol.](#))

"highly recommended ... suited for both students and highly-learned professionals " ([J. Microbiol. Meth.](#))

"a compulsory purchase for specialist research laboratories." ([Microbiol. Today](#))

Table of Contents

- **Chapter 1:** Replication of the *Bacillus subtilis* Chromosome. *Marie-Françoise Noiroi-Gros, Patrice Polard and Philippe Noiroi*
- **Chapter 2:** Dynamics of DNA Double-strand Break Repair in *Bacillus subtilis*. *Begoña Carrasco, Paula P. Cardenas, Cristina Cañas, Tribuhwan Yadav, Carolina E. César, Silvia Ayora and Juan C. Alonso*
- **Chapter 3:** Chromosome Segregation. *Peter L. Graumann*
- **Chapter 4:** Cell Division. *Frederico Gueiros-Filho*
- **Chapter 5:** The Organisation of Transcription and Translation. *Peter Lewis and Xiao Yang*
- **Chapter 6:** RNA-mediated Regulation in *Bacillus subtilis*. *Wade C. Winkler*
- **Chapter 7:** General and Regulatory Proteolysis in *Bacillus subtilis*. *Kürşad Turgay*
- **Chapter 8:** The Actin-like MreB Cytoskeleton. *Rut Carballido-López*
- **Chapter 9:** Ins and Outs of the *Bacillus subtilis* Membrane Proteome. *Jan Maarten van Dijl, Annette Dreisbach, Marcin J. Skwark, Mark J.J.B. Sibbald, Harold Tjalsma, Jessica C. Zweers and Girbe Buist*
- **Chapter 10:** The Cell Wall of *Bacillus subtilis*. *Dirk-Jan Scheffers*
- **Chapter 11:** Genomics and Cellular Biology of Endospore Formation. *Patrick Eichenberger*
- **Chapter 12:** Multicellularity and Social Behaviour in *Bacillus subtilis*. *José Eduardo González-Pastor*
- **Chapter 13:** Competence and Transformation. *Berenike Maier*

www.caister.com

Two-Component Systems in Bacteria

Edited by: R Gross, D Beier
c. 410 pp, August 2012

ISBN: 978-1-908230-08-9, \$360/£180

Latest research on structure-function analysis, sensing mechanisms, atypical two-component systems, stress responses, developmental processes, virulence and symbiosis.

Foodborne & Waterborne Bacterial Pathogens

Epidemiology, Evolution and Molecular Biology

Edited by: SM Faruque
c. 330 pp, July 2012

ISBN: 978-1-908230-06-5, \$319/£159

Review topics such as pathogenic properties, population genetics, virulence genes, evolution, drug resistance, epidemiology, detection, identification and control strategies.

Yersinia

Systems Biology and Control

Edited by: E Carniel, BJ Hinnebusch
c. 240 pp, July 2012

ISBN: 978-1-908230-05-8, \$319/£159

Leading *Yersinia* researchers review the hot topics in the systems biology and control of these important bacteria.

Stress Response in Microbiology

Edited by: JM Requena
c. 500 pp, June 2012

ISBN: 978-1-908230-04-1, \$360/£180

Expert authors from around the world summarise the current knowledge on microbial stress response and comprehensively review the recent findings that have greatly advanced the understanding of stress response systems.

Bacterial Regulatory Networks

Edited by: AAM Filloux
c. 400 pp, June 2012

ISBN: 978-1-908230-03-4, \$360/£180

Authoritative, up-to-date reviews of the current research and theories on regulatory networks in bacteria. Critical reviews written by the leading research scientists in the field.

Systems Microbiology

Current Topics and Applications

Edited by: BD Robertson, BW Wren
c. 200 pp, June 2012

ISBN: 978-1-908230-02-7, \$319/£159

Cutting-edge reviews by world-leading experts on the systems biology of microorganisms. Includes theoretical approaches, mathematical modelling, case studies on microbial species and the systems analysis of microbial phenomena.

Quantitative Real-time PCR in Applied Microbiology

Edited by: M Filion

c. 280 pp, May 2012

ISBN: 978-1-908230-01-0, \$319/£159

Aimed specifically at microbiologists, this volume describes and explains the most important aspects of current real-time quantitative PCR (qPCR) strategies, instrumentation and software.

Bacterial Spores

Current Research and Applications

Edited by: E Abel-Santos

c. 300 pp, April 2012

ISBN: 978-1-908230-00-3, \$319/£159

Comprehensive, up-to-date reviews on the current state of our knowledge of bacterial endospores. Essential text for everyone involved in spore research, the expression of recombinant proteins and pathogen detection.

Small DNA Tumour Viruses

Edited by: K Gaston

x + 324 pp, March 2012

ISBN: 978-1-904455-99-8, \$319/£159

Leading scientists from around the world review current hot-topics on small DNA tumour virus research providing a fascinating overview of their molecular biology and interactions with the host.

Extremophiles

Microbiology and Biotechnology

Edited by: RP Anitori

xiv + 300 (colour figures) pp, January 2012

ISBN: 978-1-904455-98-1, \$319/£159

Current and topical areas of extremophile research. The latest insights into the mechanisms these fascinating organisms use to survive and the most recent and novel biotechnological uses of extremophiles.

Bacillus

Cellular and Molecular Biology (2e)

Edited by: P Graumann

xii + 398 pp, February 2012

ISBN: 978-1-904455-97-4, \$360/£180

A valuable reference work providing a comprehensive and up-to-date analysis. Critical reviews on the most recent and topical research.

Microbial Biofilms

Current Research and Applications

Edited by: G Lear, GD Lewis

x + 228 pp, February 2012

ISBN: 978-1-904455-96-7, \$319/£159

An up-to-date review of the latest scientific research on microbial communities and a discussion of future trends and growth areas in biofilm-related research.

Bacterial Glycomics

Current Research, Technology and Applications

Edited by: CW Reid, SM Twine, AN Reid
x + 270 pp, February 2012

ISBN: 978-1-904455-95-0, \$319/£159

Up-to-date overview of our current understanding of bacterial glycomes, the main analytical methods and recent and novel applications.

Non-coding RNAs and Epigenetic Regulation of Gene Expression

Drivers of Natural Selection

Edited by: KV Morris

x + 216 pp, February 2012

ISBN: 978-1-904455-94-3, \$319/£159

An important and up-to-date overview of the modulation of gene transcription by non-coding RNAs. An essential reference book and a major information resource for those working in the area.

Brucella

Molecular Microbiology and

Genomics

Edited by: I López-Goñi, D O'Callaghan
x + 262 pp, February 2012

ISBN: 978-1-904455-93-6, \$319/£159

Highly acclaimed *Brucella* scientists comprehensively review the most important advances in the field. Topics include: genetic diversity, proteomic analysis, transcriptomic analysis, and much more.

Molecular Virology and Control of Flaviviruses

Edited by: P-Y Shi

x + 358 pp, January 2012

ISBN: 978-1-904455-92-9, \$360/£180

An up-to-date and cutting-edge anthology from the leading experts in the flavivirus field. Essential reading for flavivirus researchers at the graduate level and beyond.

"a valuable resource" (Doodys)

Bacterial Pathogenesis

Molecular and Cellular Mechanisms

Edited by: C Locht, M Simonet

x + 370 pp, January 2012

ISBN: 978-1-904455-91-2, \$360/£180

Distinguished scientists comprehensively describe the most relevant and up-to-date information on pathogenic features across the bacterial world.

"useful to those in many areas of research" (Doodys)