

Bacillus

Cellular and Molecular Biology

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

Published: May 2007. **Pages:** xvi + 454
Hardback: ISBN 978-1-904455-12-7 £159, \$319
Published by: Caister Academic Press www.caister.com



Bacillus subtilis is one of the best understood prokaryotes in terms of molecular biology and cell biology. Its superb genetic amenability and relatively large size have provided powerful tools to investigate a bacterium in all possible aspects. Recent improvements in technology have provided novel and amazing insights into the dynamic structure of this single cell organism. The organism is a model for differentiation, gene/protein regulation and cell cycle events in bacteria.

This book presents an overview of the most recent exciting new research fields and provides a picture of the major cytological aspects of a model bacterium. The authors present the most recent knowledge on topics such as the replication and segregation of the chromosome, cell division, replication and growth, the cell cycle, transcription, translation, regulation, the actin cytoskeleton, the cell membrane and cell wall, biofilm formation and sporulation. Also covered are DNA repair, the regulation of transcription through RNA molecules, and the regulation of protein activity through proteolysis. The authors seamlessly merge the fields of bacterial cell biology and molecular biology to provide an integral view of the bacterial cell, providing an understanding of the way a bacterial cell functions as a whole entity and in 3D, i.e. how it is spatially organized, and even how bacterial cells communicate with each other, or give their life for the sake of the whole community.

An essential book for anyone interested in *Bacillus*, cell biology or bacterial genetics and molecular biology.

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