

Shigella

Molecular and Cellular Biology

Editors: William D. Picking and Wendy L. Picking

University of Kansas, Lawrence, KS, USA

280 pp, January 2016

Book: ISBN 978-1-910190-19-7 £159, \$319

Ebook: ISBN 978-1-910190-20-3 £159, \$319

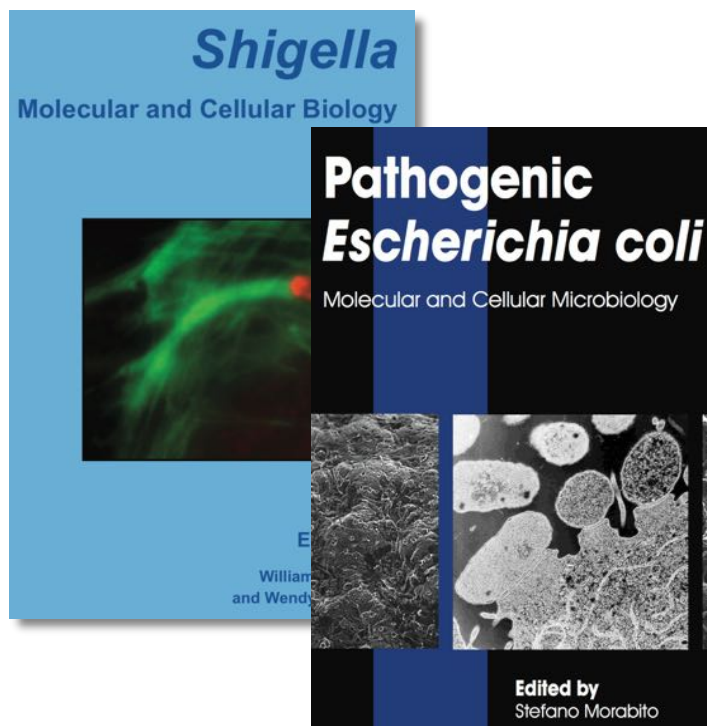
Members of the genus *Shigella* are responsible for bacillary dysentery and are of global public health importance. *Shigella* is one of the leading bacterial causes of diarrhoea worldwide with greatly elevated morbidity and mortality in developing nations and especially among children.

This book provides a thorough overview of current research on the cellular and molecular biology of *Shigella*. Expert authors have contributed authoritative and up-to-date reviews of current knowledge and recent advances in the molecular biology of these pathogens. The first section of the book explores aspects of metabolism and gene regulation and examines the molecular and cellular biology of *Shigella* as a genus diversified from *Escherichia*. This section also considers often overlooked features of bacterial pathogens and the current understanding of RNA-based regulation of gene expression. The second part of the book focuses on the important area of host-pathogen interplay, the ability of *Shigella* to subvert host signaling processes, pathways for the destruction of phagocytes, the development of novel methods for assessing host cell targets, an overview of the adaptive immunity elicited by *Shigella* and current *Shigella* vaccine candidates. The final section covers the *Shigella* type III secretion system (T3SS) recognized as a highly evolved nanomachine for promoting cross-species communication between prokaryotes and eukaryotes. Two chapters are dedicated to dynamic aspects of the *Shigella* T3SS including the needle tip complex and novel methods for the identification of newly recognized effector proteins.

This compendium provides the researcher with a flavour of the molecular and cellular topics that are important in understanding *Shigella* and the delicate balance it has with its primary host. This is an essential book for *Shigella* researchers and recommended reading for anyone working in the area of bacterial pathogenesis.

- **Chapter 1:** *Shigella* and Shigellosis.
- **Chapter 2:** *Shigella* Iron Transport Systems.
- **Chapter 3:** *Shigella* and Antivirulence: the Dark Side of Bacterial Evolution.
- **Chapter 4:** The Genetic Organization and Transcriptional Regulation of *Shigella* Virulence Genes.
- **Chapter 5:** Ribo-regulation in *Shigella*.
- **Chapter 6:** IpaB Ion Channels Induce Pyroptosis in Macrophages.
- **Chapter 7:** The Cellular Microbiology of *Shigella* Invasion of Epithelial Cells.
- **Chapter 8:** The Molecular Role of the Polar Outer Membrane Protein IcsA (VirG) in *Shigella* Actin-based Motility.
- **Chapter 9:** Trans-epithelial Communication in the Context of *Shigella* Infection.
- **Chapter 10:** Imaging Techniques to Track *Shigella* Infection at the Cellular Level.
- **Chapter 11:** Immune Responses Against *Shigella* During Natural Infection and Induced by Vaccination.
- **Chapter 12:** Dissecting *Shigella flexneri* Type III Secretion System Tip Complex Maturation.
- **Chapter 13:** Molecular Approaches to Identifying Type 3 Secreted Effectors: a *Shigella* Case Study.

www.caister.com



Pathogenic *Escherichia coli*

Molecular and Cellular Biology

Edited by: Stefano Morabito

Istituto Superiore di Sanità, Rome, Italy

x + 304 pp, April 2014

Book: ISBN 978-1-908230-37-9 £159, \$319

Ebook: ISBN 978-1-908230-99-7 £159, \$319

This book reviews the most important recent findings of the studies on pathogenic *E. coli* providing a timely overview of the field. Topics covered include: epidemiology of the disease in humans and animals and the biological mechanisms that shaped the pathogenic types of *E. coli*; shiga toxins; subtilase cytotoxin; cell cycle modulating toxins; the heat stable and heat labile enterotoxins; haemolysins; structural, molecular and functional characteristics of A/E lesions; colonization factor antigens of ETEC; enteroaggregative adhesion; host cell invasion; and the development of vaccinal strategies to confront the burden of disease. Chapters are written from a molecular and cellular biology standpoint but also include discussions of the findings with a wider perspective including considerations on public health and the impact on animal productions. Essential reading for everyone working on these and related pathogens.

- **Chapter 1:** Diarrheagenic *Escherichia coli* Infections in Humans.
- **Chapter 2:** Pathogenic *Escherichia coli* in Domestic Mammals and Birds.
- **Chapter 3:** Genomic Plasticity and the Emergence of New Pathogenic *E. coli*.
- **Chapter 4:** Shiga Toxin-encoding Phages: Multifunctional Gene Ferries.
- **Chapter 5:** Shiga Toxins.
- **Chapter 6:** *Escherichia coli* Subtilase Cytotoxin: Structure, Function and Role in Disease.
- **Chapter 7:** Cell Cycle Modulating Toxins Produced by *Escherichia coli*.
- **Chapter 8:** The Heat Stable and Heat Labile Enterotoxins Produced by ETEC.
- **Chapter 9:** Haemolysins.
- **Chapter 10:** Structural, Molecular and Functional Characteristics of Attaching and Effacing Lesions.
- **Chapter 11:** Colonization Factor Antigens of ETEC.
- **Chapter 12:** Enteroaggregative *Escherichia coli* and Disease.
- **Chapter 13:** Host Cell Invasion by Pathogenic *E. coli*.
- **Chapter 14:** Vaccines Against Enteric *E. coli* Infections in Animals.
- **Chapter 15:** Perspective of Use of Vaccines for Preventing Enterotoxigenic *Escherichia coli* (ETEC) Diarrhoea in Humans.

Flow Cytometry in Microbiology

Technology and Applications

Edited by: MG Wilkinson

xii + 218 pp, September 2015

Hardback: ISBN 978-1-910190-11-1 £159/\$319

Ebook: ISBN 978-1-910190-12-8 £159/\$319

A thorough description of flow cytometry and includes practical and up-to-date information aimed specifically at microbiologists.

Probiotics and Prebiotics

Current Research and Future Trends

Edited by: K Venema, AP Carmo

c. 560 pp, August 2015

Hardback: ISBN 978-1-910190-09-8 £180/\$360

Ebook: ISBN 978-1-910190-10-4 £180/\$360

Containing 33 chapters, the book is an invaluable source of information and essential reading for everyone working with probiotics, prebiotics and the gut microbiota.

Corynebacterium glutamicum

From Systems Biology to Biotechnological Applications

Edited by: A Burkovski

x + 198 pp, May 2015

Hardback: ISBN 978-1-910190-05-0 £159/\$319

Ebook: ISBN 978-1-910190-06-7 £159/\$319

"Without question a valuable book" (BIOspektrum)

Advanced Vaccine Research Methods for the Decade of Vaccines

Edited by: F Bagnoli, R Rappuoli

xiv + 456 pp, April 2015

Hardback: ISBN 978-1-910190-03-6 £180/\$360

Ebook: ISBN 978-1-910190-04-3 £180/\$360

A thorough and up-to-date review of vaccinology research in age of omics technologies. Essential reading for everyone working in vaccine research and development.

Antifungals

From Genomics to Resistance and the Development of Novel Agents

Edited by: AT Coste, P Vandeputte

x + 334 pp, April 2015

Hardback: ISBN 978-1-910190-01-2 £159/\$319

Ebook: ISBN 978-1-910190-02-9 £159/\$319

A timely overview of current antifungal research with chapters written from a molecular and genomic perspective.

Bacteria-Plant Interactions

Advanced Research and Future Trends

Edited by: J Murillo, BA Vinatzer, RW Jackson, et al.

x + 228 pp, March 2015

Hardback: ISBN 978-1-908230-58-4 £159/\$319

Ebook: ISBN 978-1-910190-00-5 £159/\$319

"an up-to-date overview" (Ringgold)

Aeromonas

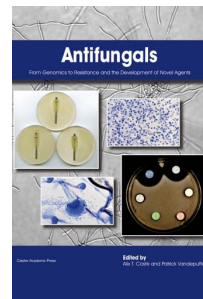
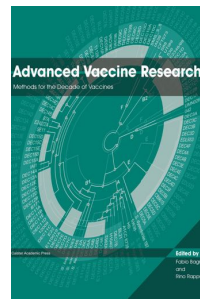
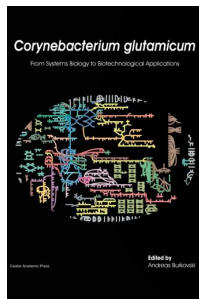
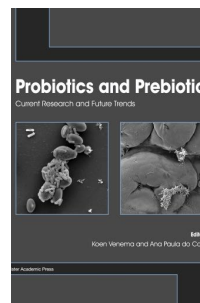
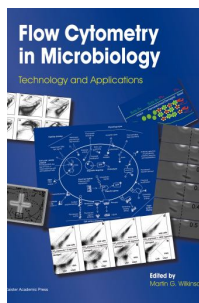
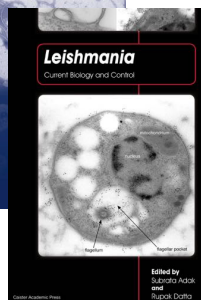
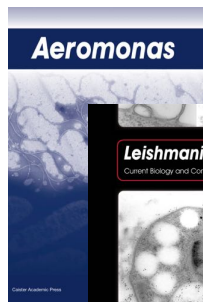
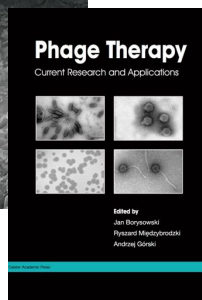
Edited by: J Graf

viii + 230 pp, May 2015

Hardback: ISBN 978-1-908230-56-0 £159/\$319

Ebook: ISBN 978-1-908230-57-7 £159/\$319

"a comprehensive review" (Ringgold); "well-written, informative" (Frontiers Microbiol.)



Antibiotics

Current Innovations and Future Trends

Edited by: S Sánchez, AL Demain

xii + 430 pp, January 2015

Hardback: ISBN 978-1-908230-54-6 £180/\$360

Ebook: ISBN 978-1-908230-55-3 £180/\$360

"packed full of useful information" (MicroToday); "genuinely a brilliant resource" (ChemMedChem); "a useful resource" (Book News); "insightful reading" (Biospektrum)

Leishmania

Current Biology and Control

Edited by: S Adak, R Datta

x + 242 pp, January 2015

Hardback: ISBN 978-1-908230-52-2 £159/\$319

Ebook: ISBN 978-1-908230-53-9 £159/\$319

"an excellent reference" (Doodys)

Pathogenic Neisseria

Genomics, Molecular Biology and Disease Intervention

Edited by: JK Davies, CM Kahler

x + 260 pp, July 2014

Hardback: ISBN 978-1-908230-47-8 £159/\$319

Ebook: ISBN 978-1-908230-61-4 £159/\$319

"a current overview on the most important research" (Ringgold)

Human Pathogenic Fungi

Molecular Biology and Pathogenic Mechanisms

Edited by: DJ Sullivan, GP Moran

x + 342 pp, June 2014

Hardback: ISBN 978-1-908230-44-7 £180/\$360

Ebook: ISBN 978-1-908230-66-9 £180/\$360

"a carefully edited and well-produced reference work" IMA Fungus

Molecular Diagnostics

Current Research and Applications

Edited by: J Huggett, J O'Grady

xii + 248 pp, May 2014

Hardback: ISBN 978-1-908230-41-6 £159/\$319

Ebook: ISBN 978-1-908230-64-5 £159/\$319

I would highly recommend this book (Doodys); useful new insights (Aus. J. Med. Sci.)

Phage Therapy

Current Research and Applications

Edited by: J Borysowski, R Międzybrodzki, A Górski

xvi + 378 pp, April 2014

Hardback: ISBN 978-1-908230-40-9 £180/\$360

Ebook: ISBN 978-1-908230-74-4 £180/\$360

"comprehensive overview" (BioSpektrum); "timely and comprehensive" CID

Campylobacter Ecology and Evolution

Edited by: SK Sheppard

xvi + 360 pp, April 2014

Hardback: ISBN 978-1-908230-36-2 £159/\$319

Ebook: ISBN 978-1-908230-98-0 £159/\$319