

Foodborne and Waterborne Bacterial Pathogens

Epidemiology, Evolution and Molecular Biology



Edited by: **Shah M. Faruque**

Molecular Genetics Laboratory, International Centre for Diarrhoeal Disease Research, Bangladesh and Department of Genetic Engineering and Biotechnology, University of Dhaka, Dhaka, Bangladesh

Published: July 2012. **Pages:** x + 318

Hardback: ISBN 978-1-908230-06-5 £159, \$319

Published by: Caister Academic Press www.caister.com

Food- and waterborne pathogens continue to be a major cause of mortality in developing countries and cause significant morbidity in developed nations. Important pathogens include species or strains of *Salmonella*, *Vibrio*, *Shigella*, *Escherichia coli*, *Yersinia*, *Staphylococcus* and *Campylobacter*. Understanding the molecular basis of pathogenesis, its evolution and spread is critical to the development of new strategies for disease prevention and control. The application of genomic and other omics technologies in recent years has led to a deluge of information in this area, making it difficult for the busy researcher to keep abreast of developments. This timely book aims to capture the essence of the latest developments to provide a timely overview of the field. Written by leading bacteriologists, chapters cover all the important bacteria and review topics such as pathogenic properties, population genetics, virulence genes, evolution, drug resistance, epidemiology, detection, identification and control strategies. Other topics include the molecular basis for enhanced transmissibility of waterborne pathogens, their mode of survival in the environment, and the evolution of new species with increased fitness both as pathogens and environmental organisms. Essential reading for microbiologists working with these and related pathogens.

Chapter 1. Introduction. *Shah M. Faruque*

Chapter 2. Epidemiology, Pathogenesis and Genetics of Diarrhoeagenic *Escherichia coli* Infections. *T. Ramamurthy and M. John Albert*

Chapter 3. Population Genetics and Molecular Epidemiology of *Shigella* species. *Kaisar Ali Talukder and Ishrat Jahan Azmi*

Chapter 4. Molecular Pathogenesis, Epidemiology and Drug Resistance of *Shigella* species. *G. P. Pazhani and T. Ramamurthy*

Chapter 5. Salmonellae: Taxonomy, Genomics and Antimicrobial Resistance. *Mahbubur Rahman*

Chapter 6. Molecular Aspects of Pathogenesis and Drug Resistance in *Salmonella* Species. *Indrani Karunasagar, Patit Paban Bhowmick and Deekshit Vijaya Kumar*

Chapter 7. Epidemiology, Molecular Biology and Detection of Foodborne *Vibrio parahaemolyticus* infections. *Marie Yeung and Kathryn J. Boor*

Chapter 8. Epidemiology and Genetics of the Pandemic Clone of *Vibrio parahaemolyticus*. *Indrani Karunasagar, Krishna Kumar and G. Balakrish Nair*

Chapter 9. Epidemiology and Molecular Pathogenesis of *Vibrio vulnificus*. *Iddya Karunasagar and Anusha Rohit*

Chapter 10. Epidemiology and Molecular Biology of *Vibrio cholerae*. *Shah M. Faruque and John J. Mekalanos*

Chapter 11. Biology of *Campylobacter* Infection. *Lieneke I. Bouwman and Jos P.M. van Putten*

Chapter 12. Epidemiology, Pathogenesis, Ecology and Genetics of *Listeria monocytogenes*. *Sangmi Lee, Robin M. Siletzky and Sophia Kathariou*

Chapter 13. Epidemiology, Virulence Genes, and Reservoirs of Enteropathogenic *Yersinia* species. *Riikka Laukkanen-Ninios and Maria Fredriksson-Ahomaa*

Chapter 14. Bacterial Factors Encoded by Mobile and Integrative Genetic Elements in Enteric Pathogens. *E. Fidelma Boyd*

Chapter 15. Conclusion and Future Prospect. *Shah M. Faruque*

Order from:

Caister Academic Press, c/o Book Systems Plus <http://www.caister.com/order>

☞ **MALDI-TOF Mass Spectrometry in Microbiology**

Edited by: Markus Kostrzewa and Sören Schubert (Published: 2016)

☞ ***Aspergillus* and *Penicillium* in the Post-genomic Era**

Edited by: Ronald P. de Vries, Isabelle Benoit Gelber and Mikael Rørdam Andersen (Published: 2016)

☞ **The Bacteriocins: Current Knowledge and Future Prospects**

Edited by: Robert L. Dorit, Sandra M. Roy and Margaret A. Riley (Published: 2016)

☞ **Omics in Plant Disease Resistance**

Edited by: Vijai Bhadauria (Published: 2016)

☞ **Acidophiles: Life in Extremely Acidic Environments**

Edited by: Raquel Quatrini and D. Barrie Johnson (Published: 2016)

☞ **Climate Change and Microbial Ecology: Current Research and Future Trends**

Edited by: Jürgen Marxsen (Published: 2016)

☞ **Biofilms in Bioremediation: Current Research and Emerging Technologies**

Edited by: Gavin Lear (Published: 2016)

☞ **Microalgae: Current Research and Applications**

Edited by: Maria-Nefeli Tsaloglou (Published: 2016)

☞ **Gas Plasma Sterilization in Microbiology: Theory, Applications, Pitfalls and New Perspectives**

Edited by: Hideharu Shintani and Akikazu Sakudo (Published: 2016)

☞ **Virus Evolution: Current Research and Future Directions**

Edited by: Scott C. Weaver, Mark Denison, Marilyn Roossinck and Marco Vignuzzi (Published: 2016)

☞ **Arboviruses: Molecular Biology, Evolution and Control**

Edited by: Nikos Vasilakis and Duane J. Gubler (Published: 2016)

☞ ***Shigella*: Molecular and Cellular Biology**

Edited by: William D. Picking and Wendy L. Picking (Published: 2016)

☞ **Aquatic Biofilms: Ecology, Water Quality and Wastewater Treatment**

Edited by: Anna M. Romání, Helena Guasch and M. Dolors Balaguer (Published: 2016)

☞ **Alphaviruses: Current Biology**

Edited by: Suresh Mahalingam, Lara Herrero and Belinda Herring (Published: 2016)

☞ **Thermophilic Microorganisms**

Edited by: Fu-Li Li (Published: 2015)

☞ **Flow Cytometry in Microbiology: Technology and Applications**

Edited by: Martin G. Wilkinson (Published: 2015)

"an impressive group of experts" ([ProtoView](#))

☞ **Probiotics and Prebiotics: Current Research and Future Trends**

Edited by: Koen Venema and Ana Paula do Carmo (Published: 2015)

☞ **Epigenetics: Current Research and Emerging Trends**

Edited by: Brian P. Chadwick (Published: 2015)

"this is one text you don't want to miss" ([Epigenie](#)); "up-to-date information" ([ChemMedChem](#))

☞ ***Corynebacterium glutamicum*: From Systems Biology to Biotechnological Applications**

Edited by: Andreas Burkovski (Published: 2015)

"Without question a valuable book" ([BIOSpektrum](#))

☞ **Advanced Vaccine Research Methods for the Decade of Vaccines**

Edited by: Fabio Bagnoli and Rino Rappuoli (Published: 2015)