

Campylobacter Ecology and Evolution

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xvi + 360 (plus colour plates) pp,

Hardback: April 2014, ISBN 978-1-908230-36-2 £159, \$319

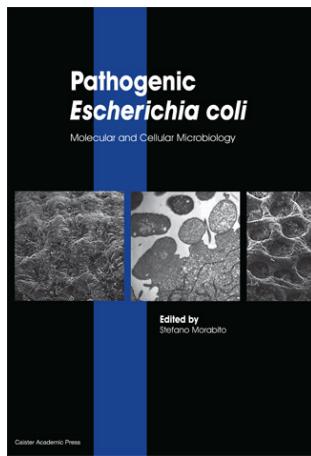
Ebook: March 2014, ISBN 978-1-908230-98-0 £159, \$319

In this book, internationally recognised experts critically review and provide novel insights into important aspects *Campylobacter* research. The book is divided into four sections: Mechanisms of evolution; Adaptations to host colonisation; Molecular epidemiology; and Ecology in poultry. The topics covered range from the mechanisms of evolution through the processes of host colonisation and within host adaptation, and epidemiology to considerations of their broader biochemical and ecological properties. An important resource summarising our current knowledge of *Campylobacter* ecology and evolution, this book is essential reading for all researchers working with *Campylobacter* and related organisms.

Contents

- Chapter 1: A Candidate Hopeful Monster in the Genus *Campylobacter*.
- Chapter 2: Learning About Recombination in *Campylobacter*.
- Chapter 3: Within-host Evolution of *Campylobacter jejuni*. • Chapter 4: Concerted Evolution in *Campylobacter jejuni* and *Campylobacter coli* • Chapter 5: Genome and Transcriptome Evolution in the Genus *Campylobacter* • Chapter 6: Repetitive DNA: A Major Source of Genetic Diversity in *Campylobacter* Populations? • Chapter 7: *Campylobacter* Strategies for Colonizing the Host Gastrointestinal Tract • Chapter 8: The Intricate Relationship Between *Campylobacter* and Mucus • Chapter 9: *Campylobacter* Association with the Human Host • Chapter 10: Siderophore-mediated Iron Acquisition for *Campylobacter* Infection • Chapter 11: Genetic Mechanisms Involved in *Campylobacter jejuni* Survival Under Oxidative Stress Conditions • Chapter 12: Oxidative Stress Survival During *Campylobacter* Transmission and Infection • Chapter 13: The Role of the Flagellum in *Campylobacter jejuni* Colonization and Disease • Chapter 14: Does Biofilm Formation Aid Colonisation and Infection in *Campylobacter*? • Chapter 15: Alternative Infection Models for *Campylobacter jejuni* • Chapter 16: Exploring the Population Dynamics of Multiple *Campylobacter* Strains in Poultry • Chapter 17: Evolution of *Campylobacter* Species in New Zealand • Chapter 18: How Molecular Typing has Changed our Understanding on Sources and Transmission Routes of *Campylobacteriosis* in Finland • Chapter 19: Extensive Spatial and Temporal Clustering of *Campylobacter* Infections Evident in High-Resolution Genotypes • Chapter 20: Ecology and Host Associations of *Campylobacter* in Wild Birds • Chapter 21: Epidemiology and Control of *Campylobacter* in Modern Broiler Production • Chapter 22: Conditional Commensalism of *Campylobacter* in Chickens • Chapter 23: The Chicken Reservoir and Specific Alleles at Conserved Contingency Loci Can Promote Host Colonization and Disease by *Campylobacter jejuni* • Chapter 24: The Long Road Ahead: Unravelling the Immune Response to *Campylobacter* in the Chicken

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Pathogenic *Escherichia coli*

Molecular and Cellular
Microbiology

Edited by: Stefano Morabito

EU Reference Laboratory for E. coli, Veterinary Public Health and Food Safety Department, Istituto Superiore di Sanità, Rome, Italy

c. 340pp pp,

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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.

Contents

- 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

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