

# Chlamydia Biology

## From Genome to Disease



**Edited by: Ming Tan, Johannes H. Hegemann and Christine Sütterlin**

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*Chlamydia* is an important bacterial pathogen and a major cause of human and animal disease. Each year, more cases of chlamydial infection are reported to the Centers for Disease Control and Prevention than all other infections combined, illustrating its enormous public health impact.

This book provides an up-to-date review of the clinical infections caused by the two main human pathogens *C. trachomatis* and *C. pneumoniae*, as well as chapters on veterinary *Chlamydia* species and *Chlamydia*-related bacteria. Multiple chapters cover cutting-edge developments in *Chlamydia* research, from the basic biology of the intracellular chlamydial infection to the host immune response and work towards a *Chlamydia* vaccine. Also highlighted are recent advances in chlamydial genetics and genomics, which have transformed the field. For the first time in a *Chlamydia* book, there are chapters on *Chlamydia* cell division and differentiation and *Chlamydia* infections and the microbiota, which are two hot areas of research. Each of the nineteen chapters is written by experts, who have made major contributions through their work and come from different research groups to ensure a broad and fresh perspective.

This book will be of interest to *Chlamydia* researchers, microbiologists, cell biologists, infectious disease clinicians, public health professionals and government policy makers. It will be especially useful for newcomers to the *Chlamydia* field, who will find a current and comprehensive summary of *Chlamydia* research in one volume.

**Chapter 1.** *Chlamydia trachomatis* Infections (Stephen Jordan, David Nelson and William Geisler)

**Chapter 2.** *Chlamydia pneumoniae* Infections (Lee Ann Campbell and David Hahn)

**Chapter 3.** *Chlamydia* Adhesion and Invasion (Matthew D. Romero, Katja Mölleken, Johannes H. Hegemann and Rey A. Carabeo)

**Chapter 4.** The Chlamydial Inclusion (Kevin Hybiske and Dagmar Heuer)

**Chapter 5.** Interactions of the Chlamydial Inclusion with the Host Cell (Christine Sütterlin and Isabelle Derré)

**Chapter 6.** *Chlamydia* and Cell-autonomous Defence: Apoptosis and Autophagy (Georg Häcker and Thomas Rudel)

**Chapter 7.** Protein Secretion in *Chlamydia* (Agathe Subtil and Richard D. Hayward)

**Chapter 8.** The Chlamydial Protease CPAF (Julie A. Brothwell, Christine Sütterlin, Thomas Rudel and Ming Tan)

**Chapter 9.** *Chlamydia* Cell Division and Differentiation (George W. Liechti, Patrick H. Viollier, Gilbert Greub and Anthony T. Maurelli)

**Chapter 10.** *Chlamydia* Gene Regulation (Christopher J. Rosario, Katelyn Soules, P. Scott Hefty and Ming Tan)

**Chapter 11.** *Chlamydia* Genetics (Colette E. O'Neill, Ian N. Clarke and Derek J. Fisher)

**Chapter 12.** *Chlamydia* Genomics (Vitor Borges, Patrick Hyden, João Paulo Gomes and Thomas Rattei)

**Chapter 13.** *Chlamydia* and Innate Immunity (Uma M. Nagarajan, Breanna J. Turman, Michael R. Knittler and Andreas Klos)

**Chapter 14.** Adaptive Immunity to *Chlamydia trachomatis* Infection (Taylor B. Poston, Toni Darville and Raymond M. Johnson)

**Chapter 15.** *Chlamydia* Vaccines (Luis M. de la Maza, Sukumar Pal, Anja W. Olsen and Frank Follmann)

**Chapter 16.** *Chlamydia* Infections and the Microbiota (Simon Graspeuner, Jan Rupp, Peter Timms and Bonnie Quigley)

**Chapter 17.** Recent Advances in Epidemiology, Pathology and Immunology of Veterinary *Chlamydiae* (Konrad Sachse and Nicole Borel)

**Chapter 18.** Thinking Outside the *Chlamydia* Box (Alyce Taylor-Brown, Tamara Halter, Adam Polkinghorne and Matthias Horn)

**Chapter 19.** Animal Models of *Chlamydia trachomatis* Infection (Guangming Zhong, Alison Quayle, Ashok Aiyar and Tianyuan Zhang)

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