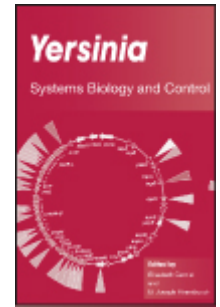


Yersinia

Systems Biology and Control



Edited by: Elisabeth Carniel and B. Joseph Hinnebusch

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Three members of the genus *Yersinia* are important human pathogens, causing diseases ranging from the deadly Plague (*Yersinia pestis*) to a relatively mild gastroenteritis (*Y. enterocolitica* and *Y. pseudotuberculosis*). Plague, a re-emerging disease, is endemic in many parts of the world. The extraordinary pathogenicity of *Y. pestis* makes it a potential bioterrorist weapon. On the other hand, the two enteropathogenic *Yersinia* species represent the third most common bacterial cause of gastroenteritis in Europe and probably elsewhere, although their prevalence is largely underestimated. This and the emergence of antibiotic resistant *Y. pestis* in recent years highlight the urgency to understand the mechanisms of pathogenicity and the need to devise new strategies for the prevention and control of human pathogenic *Yersinia*. In this book, leading *Yersinia* researchers review the hot topics in the systems biology and control of these important bacteria. Topics include: transcriptome analysis of the bacterial response to the host and of the host response to a *Yersinia* infection; proteome analysis of the bacterial and host responses; treatment and antibiotic resistance; vaccines; surveillance and control. Essential reading for everyone working on *Yersinia* and related organisms and recommended reading for researchers interested in biodefence, microbial genomics and the evolution of microbial virulence.

Chapter 1. Transcriptional Profiling of the *Yersinia pestis* Life Cycle. *B. Joseph Hinnebusch, Florent Sebbane, and Viveka Vadyvaloo*

Chapter 2. *Yersinia pseudotuberculosis* Gene Expression in Plasma. *Michael Marceau and Michel Simonet*

Chapter 3. Host Transcriptome Responses to *Yersinia pestis* Infection. *Zongmin Du and Ruifu Yang*

Chapter 4. Transcriptional Profiling of *Yersinia enterocolitica*-host Cell Interactions. *Reinhard Hoffmann, Ekaterina Lenk, and Jürgen Heesemann*

Chapter 5. Proteome Analysis of *Yersinia pestis* and the Mammalian Host Response to *Y. pestis* Infection. *Rembert Pieper and Scott N. Peterson*

Chapter 6. *Yersinia pestis* Metabolic Network. *Ali Navid and Eivind Almaas*

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