

Horizontal Gene Transfer in the Evolution of Pathogenesis

AMCM

Horizontal gene transfer is a major driving force in the evolution of many bacterial pathogens. The development of high-throughput sequencing tools and more sophisticated genomic and proteomic techniques in recent years has resulted in a better understanding of this phenomenon. Written by leading experts in the field, this edited volume is aimed at graduate students and researchers and provides an overview of current knowledge relating to the evolution of microbial pathogenicity. This volume provides an overview of the mechanisms and biological consequences of the genome rearrangements resulting from horizontal gene transfer, in both prokaryotes and eukaryotes, as well as overviews of the key mobile genetic elements involved. Subsequent chapters focus on paradigms for the evolution of important bacterial pathogens, including *Salmonella enterica*, *Streptococcus pneumoniae*, and *Staphylococcus aureus*. The influence of socioeconomic parameters in the dissemination of transferable elements, such as antibiotic-resistant genes in bacteria, is also discussed.

Michael Hensel is currently Professor of Microbiology and Immunology at the University of Erlangen in Germany.

Herbert Schmidt is currently Professor of Food Microbiology at the University of Hohenheim in Germany.

Advances in Molecular and Cellular Microbiology is a series edited by researchers active in these exciting and rapidly expanding fields. Each volume focuses on a particular aspect of cellular or molecular microbiology and provides an overview of the area, as well as examines current research. This series will enable graduate students and researchers to keep up with the rapidly diversifying literature in current microbiological research.

Cover photo: Transmission electron microscopy of *Salmonella enterica* lysogenic for bacteriophage P22. The bacteria are shown in an intracellular localization in HeLa cells, a condition that induced the prophage and the production of new phage particles. Micrograph by Dr. David Liebl, EMRL, Heinselberg, Germany.

CAMBRIDGE
UNIVERSITY PRESS
www.cambridge.org

ISBN 978-0-521-86297-4



9 780521 862974 >