

# Preface

Bacterial pathogens have been purveyors of human disease and death throughout history, and their virulence factors play critical roles in the pathogen–host interactions that lead to this morbidity and mortality. Virulence factors can influence the ability of bacterial pathogens to enter human hosts, to grow and divide within different host niches, to cause host cell damage, and to evade the innate and adaptive host defense systems. Many of these factors are conserved between different genera and species, but each bacterial pathogen has its own unique “toolkit” of virulence factors that is essential for its survival and pathogenicity. A detailed knowledge of a pathogen’s virulence toolkit is essential to understanding its disease-causing capabilities, and it may open up new anti-virulence therapeutic paradigms in the future that are geared toward treating pathogen-specific bacterial infections. These anti-virulence strategies would target the action of specific virulence factors and bypass the classical antibiotic routes that kill both pathogenic bacteria and beneficial human microbiota indiscriminately. Importantly, these antibody-based and small molecule-based approaches may provide critical diagnostic and therapeutic advantages in the rapidly approaching “post-antibiotic” age of increased levels of bacterial antibiotic resistance.

Bacterial Pathogens and Their Virulence Factors

Johnson, D.I.

2018, XV, 461 p. 130 illus., 114 illus. in color.,

Hardcover

ISBN: 978-3-319-67650-0