1. Record Nr. UNINA9910416101203321

Titolo	Bacterial type III protein secretion systems / / edited by Samuel Wagner, Jorge E. Galan
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-52123-0
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (VIII, 230 p.) : 1 illus
Collana	Current Topics in Microbiology and Immunology, , 0070-217X ; ; 427
Disciplina	616.014 579.3165
Soggetti	Bacteria - Physiology Pathogenic bacteria Bacteriologia Microbiologia mèdica Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Introduction -- Evolution of type III secretion systems -- Transcriptional and post-transcriptional regulatory mechanisms controlling type III secretion -- Assembly of type III secretion machines -- Structure of the type III secretion needle complex -- Structure and assembly of filamentous structures associated with type III secretion machines -- Structure and function of the type III secretion-associated sorting platform -- Molecular organization and assembly of the protein export apparatus -- Export mechanisms and energy transduction in type III secretion machines -- Needle length control and substrate switching in type III secretion machines -- The tip complex: sensing the host cell -- Chaperones and targeting mechanisms. .
Sommario/riassunto	One of the most exciting developments in the field of bacterial pathogenesis in recent years is the discovery that many pathogens utilize complex nanomachines to deliver bacterially encoded effector proteins into eukaryotic and prokaryotic target cells to modulate a variety of cellular functions for the pathogen’s benefit. These protein-delivery machines include the type III secretion system (T3SS), which is

widespread in nature and encoded not only by bacteria pathogenic to vertebrates or plants, but also by bacteria that are symbiotic to plants or insects. Because they are essential virulence factors for many important human pathogens, these systems are emerging as a prime target for the development of new-generation, anti-infective drugs. This book reviews our current understanding of these intriguing injection machines as well as of the closely related T3SS that serves in flagella assembly. Individual chapters focus on regulation, assembly, structure, and function of the type III secretion machine and on the evolution of the secreted effector proteins. Given its scope, this book will appeal to a broad readership, including researchers and teachers in the fields of infectious diseases, host pathogen interactions, plant and animal pathogenesis, and symbiosis.