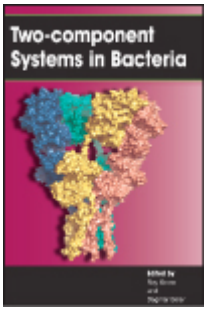
Two-Component Systems in Bacteria



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Two-component systems are signalling pathways that regulate many bacterial characteristics such as virulence, pathogenicity, symbiosis, motility, nutrient uptake, secondary metabolite production, metabolic regulation, cell division, and many more. These systems regulate physiological processes in response to environmental or cellular parameters and enable adaptation to changing conditions. They are also potential targets for antimicrobial drug design. In recent years significant advances have been made in the understanding of the role of two-component systems and molecular studies have uncovered basic mechanisms of signalling.

In this book, expert authors from around the world present the current knowledge on two-component systems in bacteria and critically evaluate the vast amount of exciting new information that has been brought to light in recent years. The eighteen chapters cover various topics including the structure-function analysis of two-component systems, the sensing mechanisms, essential or atypical two-component systems and signaling networks, two-component systems in stress responses, two-component systems in developmental processes, and two-component systems in virulence and symbiosis. The aim of this book is to provide a comprehensive overview of the area for graduate students, academic scientists and researchers in the pharmaceutical industry. This major reference work is essential reading for everyone working on bacterial regulation or antimicrobial drug design and a recommended volume for all microbiology libraries.

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