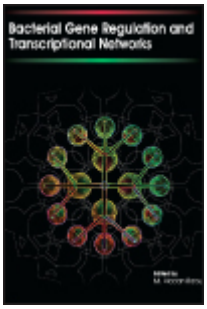

Bacterial Gene Regulation and Transcriptional Networks

Edited by: **M. Madan Babu**
MRC Laboratory of Molecular Biology, Cambridge, UK

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Gene regulation at the transcriptional level is central to the process by which organisms convert the constant sensing of environmental changes and intracellular fluxes of metabolites to homeostatic responses. In recent years a wealth of data from structural studies, sequence analysis and comparative genomics has led to a greater understanding of bacterial gene regulation and transcriptional networks.

Along with the strategic guidance of M. Madan Babu (Cambridge, UK) authors from around the world have joined forces to review and discuss the latest research observations and current theories in this highly topical and important area of microbiology. The first few chapters describe the components required for transcriptional regulation, elucidate their complexity and discuss the genome-scale theories that currently prevail by investigating a large number of completely sequenced microbial genomes. Other chapters discuss how transcriptional regulation and gene circuits can be used by bacteria to sense signals and generate phenotypic variation. The next chapters introduce experimental and computational methods for investigating transcriptional regulatory networks on a genomic scale. Later chapters explore the transcriptional complexity of specific organisms, discuss current understanding of the genome-scale regulatory networks and the importance of key transcription factors. Specific organisms covered include *Escherichia coli*, *Bacillus subtilis*, *Helicobacter pylori*, *Mycobacterium tuberculosis*, *Pseudomonas aeruginosa* and Cyanobacteria.

This book constitutes a major work on bacterial gene regulation and is a recommended purchase for all institutions and organisations interested in microbiology.

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