

CONTENTS

Contributors

vii

1. Screening and Expression of Genes from Metagenomes	1
Benedikt Leis, Angel Angelov, Wolfgang Liebl	
1. Introduction	2
2. Setup of Metagenomic Libraries	5
3. Sequence-Based Analysis	14
4. Function-Based Screenings	23
5. A Case Study: Comparative Screening of a Gene Library From an Extreme Thermophile	38
6. Improving Metagenomics	44
7. Alternative Strategies	50
8. Conclusion	54
Acknowledgments	55
References	55
2. The <i>Escherichia coli</i> Nucleoid in Stationary Phase	69
Anne S. Meyer, David C. Grainger	
1. Introduction	70
2. General Mechanisms Governing Nucleoid Structure	70
3. DNA-Binding Protein From Starved Cells	75
4. Curved DNA-Binding Protein A	78
5. Regulatory Cross-Talk between Nucleoid Proteins	81
6. Concluding Remarks	83
References	84
3. Living with Stress: A Lesson from the Enteric Pathogen <i>Salmonella enterica</i>	87
Sebastian Runkel, Hannah C. Wells, Gary Rowley	
1. <i>Salmonella</i> and the Environment	88
2. The ESRs of <i>Salmonella</i>	97
3. Nitrosative Stress Responses of <i>Salmonella</i>	115
4. Conclusion	128
References	128

4. Chitin and Glucan, the Yin and Yang of the Fungal Cell Wall, Implications for Antifungal Drug Discovery and Therapy	145
Carol A. Munro	
1. Introduction	146
2. The Fungal Cell Wall Structure From a <i>C. Albicans</i> Viewpoint	146
3. Carbohydrate Active Enzymes	148
4. Cell Wall Salvage Pathways	158
5. Echinocandins	159
6. Conclusions	161
References	162
Index	173
Contents of Previous Volumes	183