

CONTENTS

Contributors

vii

1. The Tools for Virulence of *Cryptococcus neoformans*

1

Carolina Coelho, Anamelia Lorenzetti Bocca, and Arturo Casadevall

1. Introduction to *Cryptococcus neoformans* and Cryptococcosis 2
2. What Tools Allow *C. neoformans* to Become a Pathogen? 4
3. How Does *C. neoformans* Survive Within a Host? 18
4. Why Is *C. neoformans* Successful as a Pathogen? 24
5. Future Directions 26
- References 28

2. Community Interactions of Oral Streptococci

43

Nicholas S. Jakubovics, Sufian A. Yassin, and Alexander H. Rickard

1. Introduction 44
2. The Oral Streptococci 47
3. Co-occurrence and Colocalization of Streptococci with Other Oral Microorganisms 53
4. Community Integration Factors 60
5. Conclusions and Future Directions 91
- References 93

3. Bioprospecting in the Genomic Age

111

Michael A. Hicks and Kristala L.J. Prather

1. Introduction 112
2. The Use of Metagenomic Data in Bioprospecting 113
3. Gene-Based Data-Driven Bioprospecting 120
4. Role of Enzyme Engineering in Bioprospecting 132
5. Conclusion 137
- Acknowledgments 138
- References 138

4. Environmental and Animal-Associated Enterococci

147

Christopher Staley, Gary M. Dunny, and Michael J. Sadowsky

1. Introduction 148
2. Host-Associated Enterococci 150

3. Enterococci in Extra-Enteric Habitats	159
4. Factors Influencing the Ecology of Enterococci in Extra-Enteric Habitats	172
References	178
5. An Introduction to Nitric Oxide Sensing and Response in Bacteria	187
Andrew M. Stern and Jun Zhu	
1. Biochemistry of Nitric Oxide and Reactions with Bacterial Enzymes	188
2. Environmental and Host Sources of Nitric Oxide	193
3. Transcriptional Responses to Nitric Oxide	196
4. Bacterial Nitric Oxide Tolerance Systems	201
5. Enzymatic Targets of NO	207
6. Summary	209
References	210
Index	221
Contents of Previous Volumes	229