

# Contents

|  |     |
|--|-----|
| <b>1 Helge Larsen (1922–2005) and His Contributions to the Study of Halophilic Microorganisms</b> .....  | 1   |
| Aharon Oren, Antonio Ventosa, and Yanhe Ma   |     |
| <b>2 The Halophilic World of Lourens Baas Becking</b> .....  | 9   |
| Aharon Oren  |     |
| <b>3 Taxonomy, Phylogeny, and Biotechnological Interest of the Family <i>Halomonadaceae</i></b> .....  | 27  |
| Rafael R. de la Haba, Cristina Sánchez-Porro, and Antonio Ventosa  |     |
| <b>4 The Hypersaline Lakes of Inner Mongolia: The MGAtch Project</b> ...   | 65  |
| William D. Grant, Eulyn Pagaling, M. Carmen Márquez, M. Carmen Gutiérrez, Don A. Cowan, Yanhe Ma, Brian E. Jones, Antonio Ventosa, and Shaun Heaphy  |     |
| <b>5 From Genomics to Microevolution and Ecology: The Case of <i>Salinibacter ruber</i></b> .....  | 109 |
| Arantxa Peña, Hanno Teeling, Jaime Huerta-Cepas, Fernando Santos, Inmaculada Meseguer, Marianna Lucio, Philippe Schmitt-Kopplin, Joaquín Dopazo, Ramon Rosselló-Móra, Margarete Schüller, Frank Oliver Glöckner, Rudolf Amann, Toni Gabaldón, and Josefa Antón |     |
| <b>6 Impact of Lipidomics on the Microbial World of Hypersaline Environments</b> .....   | 123 |
| Patrizia Lopalco, Simona Lobasso, Maristella Baronio, Roberto Angelini, and Angela Corcelli  |     |
| <b>7 Molecular Mechanisms of Adaptations to High Salt Concentration in the Extremely Halotolerant Black Yeast <i>Hortaea werneckii</i></b> .....   | 137 |
| Ana Plemenitaš and Nina Gunde-Cimerman   |     |

|           |  |     |
|-----------|--|-----|
| <b>8</b>  | <b>Viruses from the Hypersaline Environment</b> .....  | 153 |
|           | Elina Roine and Hanna M. Oksanen   |     |
| <b>9</b>  | <b>Haloviruses of Great Salt Lake: A Model for Understanding<br/>Viral Diversity</b> .....   | 173 |
|           | Bonnie K. Baxter, Mihnea R. Mangalea, Smaranda Willcox,<br>Shereen Sabet, Miriam-Nirvana Nagoulat, and Jack D. Griffith                |     |
| <b>10</b> | <b>Initiation and Regulation of Translation<br/>in Halophilic Archaea</b> .....  | 191 |
|           | Jörg Soppa   |     |
| <b>11</b> | <b>Protein Transport Into and Across Haloarchaeal Cytoplasmic<br/>Membranes</b> .....  | 207 |
|           | Kieran Dilks, Maria Ines Gimenez, Manuela Tripepi,<br>and Mechthild Pohlschröder   |     |
| <b>12</b> | <b>Salty and Sweet: Protein Glycosylation in <i>Haloferax volcanii</i></b> .....   | 227 |
|           | Jerry Eichler, Doron Calo, Lina Kaminski, Lina Kandiba,<br>Zvia Konrad, Hilla Magidovich, Shai Naparstek,<br>and Sophie Yurist-Doutsch |     |
| <b>13</b> | <b>Effect of Anoxic Conditions and Temperature on Gas<br/>Vesicle Formation in <i>Halobacterium salinarum</i></b> .....                | 237 |
|           | Felicitas Pfeifer, Regina Frommherz, Karin Faist,<br>Torsten Hechler, Katharina Teufel, and Larissa Marschaus                          |     |
| <b>14</b> | <b>Halophiles Exposed Concomitantly to Multiple Stressors:<br/>Adaptive Mechanisms of Halophilic Alkalithermophiles</b> .....          | 249 |
|           | Noha M. Mesbah and Juergen Wiegel  |     |
| <b>15</b> | <b>Cellular Adjustments of <i>Bacillus subtilis</i> and Other Bacilli<br/>to Fluctuating Salinities</b> .....                          | 275 |
|           | Marco Pittelkow and Erhard Bremer  |     |
| <b>16</b> | <b>The Nature and Function of Carotenoids in the Moderately<br/>Halophilic Bacterium <i>Halobacillus halophilus</i></b> .....          | 303 |
|           | Saskia Köcher and Volker Müller  |     |
| <b>17</b> | <b>Xanthorhodopsin</b> .....   | 319 |
|           | Janos K. Lanyi and Sergei P. Balashov  |     |

**18 Potential Enhancement of Biofuel Production Through Enzymatic Biomass Degradation Activity and Biodiesel Production by Halophilic Microorganisms** ..... 341  
Matthew B. Begemann, Melanie R. Mormile, Varun G. Paul, and Daniel J. Vidt

**19 Enzymes from Halophilic Archaea: Open Questions** ..... 359  
María José Bonete and Rosa María Martínez-Espinosa

**20 A Short History of the Symposia on Halophilic Microorganisms: From Rehovot 1978 to Beijing 2010** ..... 373  
Aharon Oren

**Index** ..... 383



<http://www.springer.com/978-3-642-20197-4>

Halophiles and Hypersaline Environments

Current Research and Future Trends

Ventosa, A.; Oren, A.; Ma, Y. (Eds.)

2011, XX, 387 p., Hardcover

ISBN: 978-3-642-20197-4