
Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>ix</i>
1 Construction of Small-Insert and Large-Insert Metagenomic Libraries <i>Carola Simon and Rolf Daniel</i>	1
2 Extraction of Total DNA and RNA from Marine Filter Samples and Generation of a cDNA as Universal Template for Marker Gene Studies <i>Dominik Schneider, Franziska Wemheuer, Birgit Pfeiffer, and Bernd Wemheuer</i>	13
3 Construction and Screening of Marine Metagenomic Large Insert Libraries <i>Nancy Weiland-Bräuer, Daniela Langfeldt, and Ruth A. Schmitz</i>	23
4 Constructing and Screening a Metagenomic Library of a Cold and Alkaline Extreme Environment <i>Mikkel A. Glaring, Jan K. Vester, and Peter Stougaard</i>	43
5 DNA-, RNA-, and Protein-Based Stable-Isotope Probing for High-Throughput Biomarker Analysis of Active Microorganisms <i>Eleanor Jameson, Martin Taubert, Sara Coyotzi, Yin Chen, Özge Eyice, Hendrik Schäfer, J. Colin Murrell, Josh D. Neufeld, and Marc G. Dumont</i>	57
6 Assessing Bacterial and Fungal Diversity in the Plant Endosphere <i>Bernd Wemheuer and Franziska Wemheuer</i>	75
7 Shotgun Metagenomic Sequencing Analysis of Soft-Rot <i>Enterobacteriaceae</i> in Polymicrobial Communities <i>James Doonan, Sandra Denman, James E. McDonald, and Peter N. Golysbin</i>	85
8 Cloning and Expression of Metagenomic DNA in <i>Streptomyces lividans</i> and Subsequent Fermentation for Optimized Production <i>Yuriy Rebets, Jan Kormanec, Andriy Lutzketskyy, Kristel Bernaerts, and Jozef Anné</i>	99
9 Degradation Network Reconstruction Guided by Metagenomic Data <i>Rafael Bargiela and Manuel Ferrer</i>	145
10 Novel Tools for the Functional Expression of Metagenomic DNA <i>Nadine Katzke, Andreas Knapp, Anita Loeschcke, Thomas Drepper, and Karl-Erich Jaeger</i>	159
11 A Microtiter Plate-Based Assay to Screen for Active and Stereoselective Hydrolytic Enzymes in Enzyme Libraries <i>Dominique Böttcher, Patrick Zügel, Marlen Schmidt, and Uwe T. Bornscheuer</i>	197

12	Screening for Cellulase Encoding Clones in Metagenomic Libraries.	205
	<i>Nele Ilmberger and Wolfgang R. Streit</i>	
13	Liquid Phase Multiplex High-Throughput Screening of Metagenomic Libraries Using <i>p</i> -Nitrophenyl-Linked Substrates for Accessory Lignocellulosic Enzymes	219
	<i>Mariette Smart, Robert J. Huddy, Don A. Cowan, and Marla Trindade</i>	
14	Screening Glycosyltransferases for Polyphenol Modifications	229
	<i>Nele Ilmberger and Ulrich Rabausch</i>	
15	Methods for the Isolation of Genes Encoding Novel PHA Metabolism Enzymes from Complex Microbial Communities.	237
	<i>Jiujun Cheng, Ricardo Nordeste, Maria A. Trainer, and Trevor C. Charles</i>	
16	Function-Based Metagenomic Library Screening and Heterologous Expression Strategy for Genes Encoding Phosphatase Activity	249
	<i>Genis A. Castillo Villamizar, Heiko Nacke, and Rolf Daniel</i>	
17	Activity-Based Screening of Metagenomic Libraries for Hydrogenase Enzymes	261
	<i>Nicole Adam and Mirjam Perner</i>	
18	Screening for <i>N</i> -AHSL-Based-Signaling Interfering Enzymes	271
	<i>Stéphane Uroz and Phil M. Oger</i>	
19	Mining Microbial Signals for Enhanced Biodiscovery of Secondary Metabolites	287
	<i>F. Jerry Reen, Jose A. Gutiérrez-Barranquero, and Fergal O’Gara</i>	
	<i>Index</i>	301



<http://www.springer.com/978-1-4939-6689-9>

Metagenomics

Methods and Protocols

Streit, W.; Daniel, R. (Eds.)

2017, XI, 303 p. 48 illus., 24 illus. in color., Hardcover

ISBN: 978-1-4939-6689-9

A product of Humana Press