1 Physical and Chemical Properties of Nucleic Acids ......................... 1
   Daphne Real

2 Sampling for Biostatistics........................................................................ 15
   Angela Conley and Jason Pfefferkorn

3 Sampling of Microbiological Samples..................................................... 25
   Christina Stam, Alberto Behar, and Moogega Cooper

4 Techniques for Nucleic Acid Purifications
   from Plant, Animal, and Microbial Samples........................................ 41
   Jordan Ruggieri, Ryan Kemp, Stanislav Forman,
   and Marc E. Van Eden

5 Magnetic Beads Based Nucleic Acid Purification
   for Molecular Biology Applications..................................................... 53
   Nives Kovačević

6 Systems for Mechanical Sample Lysis and Homogenization
   for Molecular Biology Applications..................................................... 69
   James A. Atwood III

7 Bead Beating Offers High-Performance Homogenization
   for Molecular Biology Downstream Processing of Tough
   and Difficult Samples.............................................................................. 85
   Vanessa M. Yu

8 High Performance Bead Beating Based Lysing,
   Homogenization and Grinding for DNA, RNA
   and Proteins Extraction with FastPrep® Systems................................... 99
   Miodrag Mičić, Jeffrey D. Whyte, and Véronique Karsten

9 Portable Systems for Sample Lysis and Homogenization ....................... 117
   Horacio Kido
10 DNA and RNA Extractions from Mammalian Samples.......................... 125
Shuko Harada
11 Sample Preparation for Multiplex PCR Assays for Food
and Agriculture Applications................................................. 139
Rachel Binet and Aparna Tatavarthy
12 Nucleic Acid Sample Preparation from Stem Cells..................... 153
Mirjana Pavlović
13 Nucleic Acid Sample Preparation from Teeth/Dental Remains...... 183
Denice Higgins and Jeremy J. Austin
14 Nucleic Acid Sample Preparation for Food Traceability............... 195
Leonor Pereira, Sónia Gomes, and Paula Martins-Lopes
15 Nucleic Acid Sample Preparation for Quantitative
and Qualitative GMO Analysis.................................................. 217
Maher Chaouachi
16 Nucleic Acid Sample Preparation from Dairy Products
and Milk................................................................................ 231
Julie Ann Kase and Tina Lusk Pfefer
17 Extraction of DNA from Plant Tissue: Review and Protocols....... 245
Farshad Tamari and Craig S. Hinkley
18 DNA Extraction from Seeds.................................................... 265
Célio Dias Santos Júnior, Natália Melquie Monteiro Teles,
Denis Prudêncio Luiz, and Thais Ferreira Isabel
19 RNA Extractions from Difficult to Prepare
and High Starch Content Seeds.............................................. 277
Preeya Puangsomlee Wangsomnuk, Benjawan Ruttawat,
Wipavadee Rittithum, Pinich Wangsomnuk, Sanun Jogloy,
and Aran Patanothai
20 Nucleic Acid and Protein Sample Preparation from Yeasts......... 285
Zhaohua Tang and Gretchen Edwalds-Gilbert
21 Nucleic Acid Purification from Soil and Environmental Sources..... 307
Moogega Cooper and Christina Stam
22 Extraction and Purification of Viral Nucleic Acids
from Environmental Samples............................................... 315
Brandon C. Iker, Masaaki Kitajima, and Charles P. Gerba
23 Preparation of Nucleic Acids from Marine Samples:
Applications to Microbial Ecology Research................................ 325
Karine Lemarchand, Thomas Pollet, Vincent Lessard,
and M. Amine Badri
24 Nucleic Acid Sample Preparation from Feces and Manure ............... 341
   Tim Reuter and Rahat Zaheer

25 Bead-Beating Sample Preparation for Nucleic Acids Isolation
   from Fecal Samples ........................................................................ 353
   Jeffrey D. Whyte

26 Methods for Extraction and Purification of Lignin
   and Cellulose from Plant Tissues ..................................................... 365
   Ksenija Radotić and Miodrag Mićić

27 Separation and Purification of Glycans Out of Glycoproteins ......... 377
   Olga Gornik, Toma Keser, and Gordan Lauc

28 Prion Extraction Methods: Comparison of Bead Beating,
   Ultrasonic Disruption, and Repeated Freeze-Thaw
   Methodologies for the Recovery of Functional Renilla-Prion
   Fusion Protein from Bacteria ............................................................. 389
   Robert M. Hnasko, Alice V. Lin, Larry H. Stanker,
   Kumar Bala, and Jeffery A. McGarvey

Index ................................................................................................................. 401
Sample Preparation Techniques for Soil, Plant, and Animal Samples
Micic, M. (Ed.)
2016, XXIII, 406 p. 96 illus., 65 illus. in color., Hardcover
A product of Humana Press