
Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>ix</i>
1 Introduction to Metabolomics <i>Teresa Whei-Mei Fan, Andrew N. Lane, and Richard M. Higashi</i>	1
2 Considerations of Sample Preparation for Metabolomics Investigation <i>Teresa Whei-Mei Fan</i>	7
3 Clinical Aspects of Metabolomics <i>Michael Bousamra II, Jamie Day, Teresa Whei-Mei Fan, Goetz Kloecker, Andrew N. Lane, and Donald M. Miller</i>	29
4 Structural Mass Spectrometry for Metabolomics <i>Richard M. Higashi</i>	61
5 Metabolomic Applications of Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)..... <i>Rob Henry and Teresa Cassel</i>	99
6 Principles of NMR for Applications in Metabolomics <i>Andrew N. Lane</i>	127
7 Novel NMR and MS Approaches to Metabolomics <i>Ian A. Lewis, Michael R. Shortreed, Adrian D. Hegeman, and John L. Markley</i>	199
8 Metabolic Flux Analysis <i>Tae Hoon Yang</i>	231
9 Introduction to Metabolic Control Analysis (MCA) <i>Maliackal Poulo Joy, Timothy C. Elston, Andrew N. Lane, Jeffrey M. Macdonald, and Marta Cascante</i>	279
10 Application of Tracer-Based Metabolomics and Flux Analysis in Targeted Cancer Drug Design <i>Marta Cascante, Vitaly Selivanov, and Antonio Ramos-Montoya</i>	299
11 Noninvasive Fluxomics in Mammals by Nuclear Magnetic Resonance Spectroscopy..... <i>Justyna Wolak, Kayvan Rahimi-Keshari, Rex E. Jeffries, Maliackal Poulo Joy, Abigail Todd, Peter Pediatitakis, Brian J. Dewar, Jason H. Winnike, Oleg Favorov, Timothy C. Elston, Lee M. Graves, John Kurhanzewicz, Daniel Vigneron, Ekhsan Holmuhamedov, and Jeffrey M. Macdonald</i>	321
12 Compositional Analysis of Phospholipids by Mass Spectrometry and Phosphorus-31 Nuclear Magnetic Resonance Spectroscopy <i>M. Cecilia Yappert</i>	393

13	The HumanCyc Pathway-Genome Database and Pathway Tools Software as Tools for Imaging and Analyzing Metabolomics Data	419
	<i>Pedro Romero</i>	
14	Metabolomics-Edited Transcriptomics Analysis (META)	439
	<i>Teresa Whei-Mei Fan</i>	
	<i>Index</i>	481

The Handbook of Metabolomics

Fan, T.W.-M.; Lane, A.N.; Higashi, R.M. (Eds.)

2012, X, 484 p. 140 illus., 43 illus. in color., Hardcover

ISBN: 978-1-61779-617-3

A product of Humana Press