
Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>ix</i>

PART I INTRODUCTION

1 Mass Spectrometry-Based Chemoproteomic Approaches.	3
<i>Marcus Bantscheff</i>	
2 Chemical Proteomics in Drug Discovery.	15
<i>Gerard Drewes</i>	

PART II SMALL MOLECULES AND PROBE DESIGN

3 Compound Immobilization and Drug-Affinity Chromatography.	25
<i>Uwe Rix, Manuela Gridling, and Giulio Superti-Furga</i>	
4 Affinity-Based Chemoproteomics with Small Molecule-Peptide Conjugates.	39
<i>Chaitanya Saxena</i>	
5 A Chemical Proteomic Probe for Detecting Dehydrogenases: <i>Catechol Rhodanine</i>	55
<i>Xia Ge and Daniel S. Sem</i>	
6 Probing Proteomes with Benzophenone Photoprobes.	65
<i>Akira Kawamura and Doina M. Mihai</i>	
7 Biotinylated Probes for the Analysis of Protein Modification by Electrophiles	77
<i>Simona G. Codreanu, Hye-Young H. Kim, Ned A. Porter, and Daniel C. Liebler</i>	
8 Profiling of Methyltransferases and Other S-Adenosyl-L-Homocysteine- Binding Proteins by Capture Compound Mass Spectrometry	97
<i>Thomas Lenz, Peter Poot, Elmar Weinhold, and Mathias Dreger</i>	

PART III TARGET DISCOVERY AND TARGET VALIDATION

9 Identifying Cellular Targets of Small-Molecule Probes and Drugs with Biochemical Enrichment and SILAC	129
<i>Shao-En Ong, Xiaoyu Li, Monica Schenone, Stuart L. Schreiber, and Steven A. Carr</i>	
10 Determination of Kinase Inhibitor Potencies in Cell Extracts by Competition Binding Assays and Isobaric Mass Tags	141
<i>Carsten Hopf, Dirk Eberhard, Markus Boesche, Sonja Bastuck, Birgit Dümpelfeld, and Marcus Bantscheff</i>	
11 Affinity-Based Profiling of Dehydrogenase Subproteomes	157
<i>Xia Ge and Daniel S. Sem</i>	

12	Probing the Specificity of Protein–Protein Interactions by Quantitative Chemical Proteomics.	167
	<i>Duangnapa Kovanich, Thin Thin Aye, Albert J.R. Heck, and Arjen Scholten</i>	
13	Fluorescence-Based Proteasome Activity Profiling.	183
	<i>Annemieke de Jong, Karianne G. Schuurman, Boris Rodenko, Huib Ovaa, and Celia R. Berkers</i>	
14	Chemical Cross-Linking and High-Resolution Mass Spectrometry to Study Protein–Drug Interactions.	205
	<i>Mathias Q. Müller and Andrea Sinz</i>	
15	Monitoring Ligand Modulation of Protein–Protein Interactions by Chemical Cross-Linking and High-Mass MALDI Mass Spectrometry.	219
	<i>Natalia Gasilova and Alexis Nazabal</i>	
16	Time-Controlled Transcardiac Perfusion Crosslinking for In Vivo Interactome Studies.	231
	<i>Amy Hye Won Jeon and Gerold Schmitt-Ulms</i>	
PART IV LIGAND DISCOVERY		
17	Ligand Discovery Using Small-Molecule Microarrays.	249
	<i>Dominick E. Casalena, Dina Wassaf, and Angela N. Koehler</i>	
18	Working with Small Molecules: Preparing and Storing Stock Solutions and Determination of Kinetic Solubility.	265
	<i>Andrea Wolf, Satoko Shimamura, and Friedrich B.M. Reinhard</i>	
19	A Database for Chemical Proteomics: ChEBI.	273
	<i>Paula de Matos, Nico Adams, Janna Hastings, Pablo Moreno, and Christoph Steinbeck</i>	
20	Working with Small Molecules: Rules-of-Thumb of “Drug Likeness”	297
	<i>Ming-Qiang Zhang</i>	
	Index.	309

Chemical Proteomics

Methods and Protocols

Drewes, G.; Bantscheff, M. (Eds.)

2012, XI, 313 p. 63 illus., 2 illus. in color., Hardcover

ISBN: 978-1-61779-363-9

A product of Humana Press