
Contents

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

PART I OVERVIEWS

1 A Digest of Protein Purification	3
<i>Dermot Walls, Robert McGrath, and Sinéad T. Loughran</i>	
2 Gel-Filtration Chromatography	25
<i>Ciarán Ó'Fágáin, Philip M. Cummins, and Brendan F. O'Connor</i>	
3 Immunoaffinity Chromatography	35
<i>Jenny Fitzgerald, Paul Leonard, Elaine Darcy, and Richard O'Kennedy</i>	
4 Avoiding Proteolysis During Protein Chromatography	61
<i>Barry J. Ryan</i>	
5 Scale-Up of Protein Purification: Downstream Processing Issues	73
<i>John Joseph Milne</i>	
6 Phage Display: A Powerful Technology for the Generation of High Specificity Affinity Reagents from Alternative Immune Sources	87
<i>William J.J. Finlay, Laird Bloom, and Orla Cunningham</i>	
7 Engineering Protein Stability	103
<i>Ciarán Ó'Fágáin</i>	
8 Microfluidics in Protein Chromatography	137
<i>Frank A. Gomez</i>	
9 Tagging Recombinant Proteins to Enhance Solubility and Aid Purification	151
<i>Dermot Walls and Sinéad T. Loughran</i>	

PART II PROTOCOLS

10 Storage and Lyophilisation of Pure Proteins	179
<i>Ciarán Ó'Fágáin</i>	
11 Differential Precipitation and Solubilization of Proteins	203
<i>Barry J. Ryan</i>	
12 Ion-Exchange Chromatography: Basic Principles and Application to the Partial Purification of Soluble Mammalian Prolyl Oligopeptidase	215
<i>Philip M. Cummins, Oonagh Dowling, and Brendan F. O'Connor</i>	
13 Protein Quantitation and Analysis of Purity	229
<i>Eva M. Campion, Sinéad T. Loughran, and Dermot Walls</i>	
14 Purification of Proteins Fused to Glutathione S-Transferase	259
<i>Sandra Harper and David W. Speicher</i>	
15 Purification of Proteins Fused to Maltose-Binding Protein	281
<i>Mario Lebendiker and Tsafi Danieli</i>	

16	Purification of Proteins from Baculovirus-Infected Insect Cells	295
	<i>Luke O'Shaughnessy and Sean Doyle</i>	
17	Purification of Poly-Histidine-Tagged Proteins	311
	<i>Sinéad T. Loughran and Dermot Walls</i>	
18	Immobilized Metal Affinity Chromatography/Reversed-Phase Enrichment of Phosphopeptides and Analysis by CID/ETD Tandem Mass Spectrometry.	337
	<i>Rosana Navajas, Alberto Paradela, and Juan Pablo Albar</i>	
19	Tag Removal by Site-Specific Cleavage of Recombinant Fusion Proteins	349
	<i>Adam Charlton and Michael Zacharion</i>	
20	Purification of Antibodies Using Affinity Chromatography	369
	<i>Elaine Darcy, Paul Leonard, Jenny Fitzgerald, Martin Danaher, and Richard O' Kennedy</i>	
21	Optimized Generation of High-Affinity, High-Specificity Single-Chain Fv Antibodies from Multiantigen Immunized Chickens	383
	<i>William J.J. Finlay, Laird Bloom, and Orla Cunningham</i>	
22	Measuring Protein–Protein Interactions Using Biacore	403
	<i>Paul Leonard, Stephen Hearty, and Richard O'Kennedy</i>	
23	Ultra-Performance Liquid Chromatography–Mass Spectrometry of Proteins.	419
	<i>Timothy R. Croley</i>	
24	Hydrophobic Interaction Chromatography	431
	<i>Philip M. Cummins and Brendan F. O'Connor</i>	
25	Fast Protein Liquid Chromatography	439
	<i>Ashkan Madadlou, Siobhan O'Sullivan, and David Sheehan</i>	
26	Shotgun Proteomics: A Qualitative Approach Applying Isoelectric Focusing on Immobilized pH Gradient and LC-MS/MS	449
	<i>Laurent Geiser, Ali R. Vaezzadeh, Jacques M.P. Deshusses, and Denis F. Hochstrasser</i>	
27	Shotgun Proteomics: A Relative Quantitative Approach Using Off-Gel Electrophoresis and LC-MS/MS	459
	<i>Laurent Geiser, Loïc Dayon, Ali R. Vaezzadeh, and Denis F. Hochstrasser</i>	
28	Clinical Proteomics: Liquid Chromatography–Mass Spectrometry Purification Systems	473
	<i>Michael Henry and Paula Meleady</i>	
29	Strategies for the Purification of Membrane Proteins	485
	<i>Sinead Marian Smith</i>	
30	A Multi-Step Chromatographic Strategy to Purify Three Fungal Endo- β -Glucanases.	497
	<i>Tracey McCarthy and Maria G. Tuohy</i>	
	<i>Index</i>	525



<http://www.springer.com/978-1-60761-912-3>

Protein Chromatography

Methods and Protocols

Walls, D.; Loughran, S. (Eds.)

2011, X, 527 p., Hardcover

ISBN: 978-1-60761-912-3

A product of Humana Press