

Purification Tools for Monoclonal Antibodies

by Pete Gagnon

ISBN: 0-9653515-9-9

Table of Contents

Foreword	iii
Preface	v
Chapter 1. Introduction	1
What this book is about	1
How this book is organized	2
In practice	3
Chapter 2. Precipitation	5
With inorganic salts	5
Mechanism	5
Attributes	8
Limitations	9
Method development	13
With polyethylene glycol	15
Mechanism	15
Attributes	16
Limitations	17
Method development	18
By electrolyte depletion	19
Mechanism	19
Attributes	19
Limitations	20
With octanoic acid	20
Mechanism	20
Attributes	21
Limitations	22
Method development	24
With ethacridine	24
Mechanism	24
Attributes	24
Limitations	26
Method development	26
In perspective	27
Recommended reading	28
References	28
Chapter 3. Size Exclusion Chromatography	33
Mechanism	33
Attributes	38
Limitations	42
Method development	50
In perspective	53
Recommended reading	54
References	54

Chapter 4. Ion Exchange Chromatography	57
Mechanism	57
Attributes	62
Limitations	67
Method development	74
In perspective	81
Recommended reading	82
References	8
Chapter 5. Hydroxyapatite Chromatography	87
Mechanism	87
Attributes	90
Limitations	94
Method development	97
In perspective	99
Recommended reading	100
References	100
Chapter 6. Hydrophobic Interaction Chromatography	103
Mechanism	103
Attributes	110
Limitations	113
Method development	120
In perspective	123
Recommended reading	123
References	123
Chapter 7. Immobilized Metal	
Affinity Chromatography	127
Mechanism	127
Attributes	130
Limitations	132
Method development	135
In perspective	136
Recommended reading	137
References	137
Chapter 8. Other Physicochemically-Based	
Chromatography Methods	139
Hydrophilic interaction chromatography	139
Mechanism	139
Attributes	141
Limitations	142
Method development	144
In perspective	145
Euglobulin adsorption chromatography	145
Thiophilic adsorption chromatography	146
Dye ligand chromatography	148
ABx chromatography	150
Immobilized boronate chromatography	150
References	151

Chapter 9. Protein A Affinity Chromatography	155
Mechanism	155
Attributes	163
Limitations	168
Method development	186
In perspective	189
Recommended reading	190
References	190
Chapter 10. Other Biological Affinity Ligands	199
Protein G	199
Mechanism	199
Attributes	200
Limitations	201
In perspective	202
Protein A/G hybrids	202
Other bacterial ligands	202
Immunoaffinity	203
Peptide/oligonucleotide affinity	205
Lectin affinity	205
Mechanism	205
Attributes	205
Limitations	206
Alkaline polypeptide ligands	207
DNA affinity	207
Carbohydrate affinity	208
Recommended reading	208
References	208
Appendix I. Foundation protocols	213
Octanoic acid precipitation followed by ammonium sulfate precipitation	213
Ethacridine precipitation followed by size exclusion chromatography	215
Ammonium sulfate precipitation followed by anion exchange chromatography	217
Polyethylene glycol precipitation followed by euglobulin adsorption chromatography	218
Immobilized metal affinity followed by hydrophobic interaction chromatography ...	219
Protein A affinity chromatography followed by cation exchange chromatography	221
Ion exchange chromatography with hydrophobic interaction chromatography ...	224
Appendix II. Sample Preparation	225
Index	229

To order: In the U.S., please call 1-800-247-6553. Outside the U.S., please call 419-281-1802, or e-mail <order@bookmaster.com>