

## CONTENT

1.	COLUMNS FOR HPLC SEPARATION OF MACROMOLECULES	1
	Introduction	1
	Columns and Packing Materials for Protein and Peptide HPLC	1
	Columns and Packing Materials for Immunoglobulins	27
	Columns and Packing materials for Oligonucleotides	28
	Columns and Packing Materials for Oligosaccharides	32
	Column Care and Supply	35
	References	41
2.	HPLC INSTRUMENTATION	43
	Introduction	43
	HPLC Instrumentation: Design Principles	43
	Modular HPLC Instrumentation for Separation of Small Molecules	48
	Modular HPLC Instrumentation for the Separation of Macromolecules	70
	The origin of the additional problems encountered when separating mixtures of Macromolecules by HPLC	71
	The assessment of HPLC systems designed to separate macromolecules	75
	References	75
3.	SIZE-EXCLUSION HPLC OF PROTEINS	77
	Introduction	77
	Choice of Column	79
	Elution Systems	82
	Analysis of Eluate Fractions	84
	Other Selected Applications	88
	Column Maintenance	88
	References	89
4.	ION-EXCHANGE CHROMATOGRAPHY OF PROTEINS AND PEPTIDES	91
	Introduction	91
	Materials and Methods	93
	Applications	122
	Acknowledgements	123
	References	123
	Appendix I	124
	Appendix II	124
	Appendix III	125
5.	REVERSED-PHASE CHROMATOGRAPHY OF PROTEINS	127

Introduction	127
Theoretical Considerations	128
Apparatus	134
Packings and Columns	136
Mobile Phases	140
Achieving and Modifying a Separation	145
Apres Chromatography	149
Examples	151
References	156
6. HIGH-PERFORMANCE AFFINITY CHROMATOGRAPHY	157
Introduction	157
Properties and Practical Considerations of Column Support	157
Matrix Pre-treatment: Coating, Functionalization and Activation	160
Ligand Coupling to Functional and Activated Matrices	167
Determination of Immobilized Ligand Concentration	173
Packing of HPAC Gels	174
Applications of HPAC	175
References	182
7. HPLC OF OLIGONUCLEOTIDES	183
Introduction	183
Principles and Techniques	183
Practical Considerations	191
Applications	195
Acknowledgements	207
References	207
8. AFFINITY CHROMATOGRAPHY OF COMPLEX CARBOHYDRATES USING LECTINS	209
Introduction	209
Lectins as kAffinity Chromatographic Support Materials	209
Lectin Affinity Chromatography	216
Choice of Lectin	226
References	227
APPENDIX	
Manufacturers and Suppliers of HPLC Columns and Column Support Materials, And of HPLC Instruments	229
INDEX	235