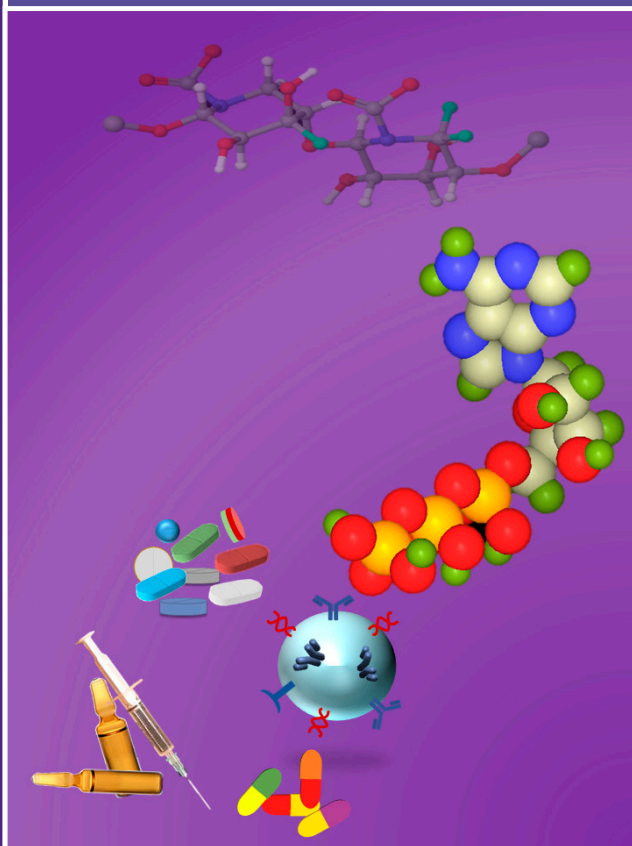


Applications of Polymers in Drug Delivery

Editors:

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Preface

Polymers have changed the world dynamics completely including the field of pharmaceuticals. Extensive and meticulous studies of polymers and their characteristics have unfolded new areas in drug delivery and as a result, many drug delivery systems by different routes have become a reality. In a nutshell, polymers play a significant role in tailoring drug delivery to exploit maximum therapeutic benefits. Even after tremendous developments in polymer science and their role in drug delivery, and novel outcomes, their use in drug delivery has not been widely published. We appreciate involvement of interdisciplinary pharmaceutical organisations and recent advances in genomics and proteomics, polymer-based drug delivery science has started moving progressively towards the clinical presentations of polymer systems and its utilisation for advanced drug delivery systems.

The thought behind this book is to pull together the recent work in the area of 'Polymeric Drug Delivery Systems' in pharmaceuticals. The book is designed to provide details on applications of polymeric drug delivery systems for researchers, industries and academia. The applications described here are likely to produce new notions for applying polymers in drug delivery technology.

In order to make this book more usable, chapters are designed to discuss polymer applications specific to a particular route of drug delivery which provides direct insights for the reader in to a particular aspect of drug delivery. The first chapter describes the breadth of fundamental polymeric drug delivery systems, the factors affecting drug delivery through polymers and latest developments in polymers to illustrate areas of research advancing the frontiers of drug delivery, together with the intellectual property problems around polymeric systems. Further chapters embrace insights into novel polymeric drug delivery systems used in buccal, colonic, gastroretentive, intestinal, nasal, ocular, parenteral, Peyer's Patch, pulmonary, rectal, transdermal, and vaginal drug delivery systems. Appendices are included at the end of the book to show useful pharmaceutical properties of the polymers and important polymeric applications through various routes of drug delivery.

It gives me immense pleasure to extend my gratitude to all contributors who brought together their collective experience, knowledge, skills, and wisdom to produce this

Applications of Polymers in Drug Delivery

book in its present form. Without the support of the authors of this book, it would have not been accomplished. We also thank the many researchers, who have devoted their time to this project by working on these contributions, and safeguarding the lucidity and technical precision of the manuscripts. Thanks are also due to Smithers Rapra who have published this book for the greater benefit of the academicians, researchers, students and society at large. We are also thankful to other authors and publishers who have given us permission to use their research.

Ambikanandan Misra

September 2013

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Applications of Polymers in Drug Delivery

C ontents

1	Polymers in Drug Delivery Systems	1
1.1	Introduction.....	1
1.2	Fundamentals of a Polymeric Drug Delivery System	2
1.2.1	Factors That Affect Drug Release from Polymers.....	3
1.2.2	Mechanism of Controlled Release.....	4
1.2.2.1	Temporal Controlled Systems	4
1.2.2.1.1	Delayed Dissolution	5
1.2.2.1.2	Diffusion Controlled	5
1.2.2.1.2.1	Release from Monolithic/ Matrix Systems	6
1.2.2.1.2.2	Reservoir Type Systems	6
1.2.2.1.3	Osmotic/Solvent Controlled Systems.....	6
1.2.2.1.4	Swelling Controlled	7
1.2.2.1.5	Environmental/Stimuli Responsive Systems.....	7
1.2.2.1.5.1	Thermo-responsive Polymers	11
1.2.2.1.5.2	pH-Responsive Polymers	12
1.2.2.1.5.3	Dual Stimuli Responsive Polymers	13
1.2.2.2	Distribution Controlled Systems	14
1.2.2.3	Biodegradable/Degradation and Erosion Controlled Systems	14
1.3	Polymer Delivery Systems	16

Applications of Polymers in Drug Delivery

1.3.1	Oral Drug Delivery System	17
1.3.1.1	Gastro Retentive Drug Delivery System	17
1.3.1.1.1	Floating System	18
1.3.1.1.2	Hydrodynamically Balanced Systems.....	19
1.3.1.1.3	Bio/Mucoadhesive Systems	19
1.3.1.1.4	Hydration-mediated Adhesion.....	20
1.3.1.1.5	Swelling Systems.....	20
1.3.1.2	Colon Specific Drug Delivery System	21
1.3.1.2.1	pH Sensitive Systems	21
1.3.1.2.1.1	Coating with pH Dependent Polymers.....	21
1.3.1.2.1.2	Coating with pH Independent Biodegradable Polymers ..	23
1.3.1.2.2	Time Controlled/Dependent System.....	23
1.3.1.2.3	Pressure Controlled System.....	24
1.3.1.2.4	Osmotically Controlled System.....	24
1.3.1.2.5	Pulsatile Drug Delivery System	25
1.3.1.3	Ion-exchange Based Drug Delivery System.....	25
1.3.2	Transdermal Drug Delivery System	26
1.3.2.1	Classification of Transdermal Drug Delivery.....	26
1.3.2.1.1	Reservoir Systems	26
1.3.2.1.2	Drug-in-adhesive Systems	27
1.3.2.1.3	Matrix-dispersion Systems.....	28
1.3.2.1.4	Micro-reservoir Systems	28
1.3.2.2	Polymers for Transdermal Drug Delivery System	28
1.3.2.2.1	Natural Polymers	28
1.3.2.2.2	Synthetic Polymers	28

	1.3.2.2.2.1	Pressure Sensitive Adhesives	29
	1.3.2.2.2.2	Backing Membrane	29
	1.3.2.2.2.3	Release Liner	29
1.3.3		Mucoadhesive Drug Delivery System	29
	1.3.3.1	Hydrophilic Polymers	30
	1.3.3.2	Hydrogels	31
	1.3.3.3	Thiolated Polymers	31
	1.3.3.4	Lectin-based Polymers	32
1.3.4		Ocular Drug Delivery System	32
	1.3.4.1	Polymers used in Conventional Ocular Delivery	33
		1.3.4.1.1	Liquid Dosage Forms
		1.3.4.1.2	Semi-solid Dosage Forms
	1.3.4.2	Polymers used in Ophthalmic Inserts/Films	34
1.3.5		Implant and Parenteral Drug Delivery System	35
	1.3.5.1	Surgical Implants	35
	1.3.5.2	Microspheres	36
		1.3.5.2.1	Bioadhesive Microspheres
		1.3.5.2.2	Floating Microspheres
		1.3.5.2.3	Polymeric Microspheres
			1.3.5.2.3.1
			Biodegradable Polymeric Microspheres
			1.3.5.2.3.2
			Synthetic Polymeric Microspheres
	1.3.5.3	Injectable <i>In Situ</i> Gel	39
		1.3.5.3.1	Thermoplastic Paste
		1.3.5.3.2	<i>In Situ</i> Crosslinking System
		1.3.5.3.3	<i>In Situ</i> Polymer Precipitation
		1.3.5.3.4	Thermally-induced Gelling System

Applications of Polymers in Drug Delivery

1.4	Recent Advancements in Polymer Architecture and Drug Delivery	41
1.4.1	Block Copolymers.....	41
1.4.2	Polymersomes	42
1.4.3	Hyperbranched Polymers.....	43
1.4.4	Graft Polymers.....	43
1.4.5	Star Polymers.....	44
1.4.6	Dendrimers	44
1.5	Recent Patent Trends in Polymeric Drug Delivery	45
1.6	Future Developments	47
2	Applications of Polymers in Buccal Drug Delivery	59
2.1	Introduction.....	59
2.1.1	Advantages of Buccal Drug Delivery	60
2.1.2	Disadvantages of Buccal Drug Delivery	60
2.2	Factors Affecting Bioadhesion in the Oral Cavity	61
2.2.1	Functional Groups	62
2.2.2	Molecular Weight	62
2.2.3	Flexibility.....	62
2.2.4	Crosslinking Density	63
2.2.5	Charge	64
2.2.6	Concentration.....	65
2.2.7	Hydration (Swelling).....	66
2.2.8	Environmental Factors.....	66
2.3	Buccal Polymeric Dosage Forms.....	67
2.3.1	Semi-solids.....	67
2.3.2	Solids	69
2.3.2.1	Powder Dosage Forms	69
2.3.2.2	Tablets	69
2.3.2.3	Polymeric Films and Patches	77
2.4	Novel Carriers	80

2.5	Conclusions	81
3	Applications of Polymers in Gastric Drug Delivery	97
3.1	Introduction.....	97
3.2	Need for Gastric Retention	98
3.3	Benefits and Pitfalls.....	99
3.4	Gastrointestinal Tract	101
3.4.1	Anatomy of the Gastrointestinal Tract.....	101
3.4.1.1	Mucus Layer.....	102
3.4.2	Basic Gastrointestinal Tract Physiology	103
3.5	Factors Affecting Gastric Retention	105
3.6	Polymers in Gastro Retentive Drug Delivery Systems	106
3.6.1	Cellulosic Hydrocolloids	106
3.6.2	Carbomers or Carbopol®	107
3.6.3	Xanthan Gum	108
3.6.4	Guar Gum	109
3.6.5	Chitosan	109
3.6.6	Eudragit® Polymers	110
3.6.7	Alginate Polymers.....	111
3.6.8	Lectin-based Polymers	112
3.6.9	Thiolated Polymers.....	112
3.6.10	Miscellaneous Polymers.....	112
3.7	Evaluation of Gastro Retentive Drug Delivery Systems	114
3.7.1	<i>In Vitro</i> Evaluation	114
3.7.1.1	Floating Systems	114
3.7.1.2	Swelling Systems.....	114
3.7.2	<i>In Vitro</i> Release	115
3.7.3	<i>In Vivo</i> Evaluation	116
3.8	Application of Polymers in Gastric Delivery Systems	117
3.8.1	Floating Drug Delivery System	117

Applications of Polymers in Drug Delivery

3.8.1.1	Effervescent Floating Dosage Forms	117
3.8.1.2	Non-effervescent Floating Dosage Forms.....	118
3.8.2	Bioadhesive Drug Delivery System	119
3.8.3	Swelling and Expanding Delivery System.....	119
3.8.4	Combinational/Amalgamative Delivery System	121
3.8.4.1	Bioadhesive and Floating Approach.....	122
3.8.4.2	Swellable and Floating Approach.....	122
3.8.4.3	Bioadhesion and Swelling Approach.....	122
3.8.4.4	Bioadhesion and High-density Approach	123
3.8.5	Microparticulate Delivery System	123
3.8.5.1	Microballoons/Hollow Microspheres.....	123
3.8.5.2	Alginate Beads	123
3.8.5.3	Floating Granules	124
3.8.5.4	Super Porous Hydrogel Systems	124
3.8.5.5	Raft Forming Systems	124
3.9	Conclusion.....	125
4	Applications of Polymers in Small Intestinal Drug Delivery.....	135
4.1	Introduction.....	135
4.1.1	Advantages of Polymer Coating.....	136
4.1.2	Benefit from Polymer Coatings with Sustained Release ..	136
4.2	Physiology of the Small Intestine.....	137
4.2.1	Mucosa of Small Intestine	137
4.2.2	Secretion into the Small Intestine	138
4.2.2.1	Glands	138
4.2.2.2	Pancreatic Secretion	138
4.2.2.3	Biliary Secretions	139
4.2.2.4	Digestion of the Food Nutrients.....	139
4.2.3	pH of the Small Intestine	139
4.2.4	Gastrointestinal Motility	139

4.2.5	Transit of the Dosage Form through the Small Intestine	140
4.2.6	Drug Absorption through Small Intestine	141
4.2.7	Peyer's Patch	142
4.3	Scope of Small Intestinal Drug Delivery	142
4.4	Polymers used in Small Intestinal Drug Delivery	144
4.4.1	Natural Polymers	144
4.4.1.1	Chitosan	144
4.4.1.2	Shellac	145
4.4.1.3	Sodium Alginate	146
4.4.2	Synthetic Polymers	147
4.4.2.1	Polyacrylic acid Derivatives (Carbomer)	148
4.4.2.2	Cellulose Derivatives.....	149
4.4.2.2.1	Cellulose Acetate Phthalate.....	150
4.4.2.2.2	Hydroxypropyl Methyl Cellulose Phthalate 151	
4.4.2.2.3	Polyvinyl Acetate Phthalate	153
4.4.2.2.4	Hydroxypropyl Methyl Cellulose Acetate Succinate	153
4.4.2.2.5	Cellulose Acetate Trimelliate	154
4.4.2.3	Polymethacrylates	155
4.4.2.3.1	Polymethacrylic Acid- <i>co</i> -ethyl Acrylate as Aqueous Dispersion.....	155
4.4.2.3.2	Polymethacrylic Acid- <i>co</i> -ethyl Acrylate as Powder	156
4.4.2.3.3	Polyethyl Acrylate- <i>co</i> -methyl Methacrylate- <i>co</i> -trimethylammonioethyl Methacrylate Chloride.....	157
4.4.2.3.4	Polymethacrylic Acid- <i>co</i> -methyl Methacrylate	157
4.4.2.3.5	Polymethacrylic Acid- <i>co</i> -	

Applications of Polymers in Drug Delivery

		methylmethacrylate	158
	4.4.2.3.5.1	Methacrylic Acid - Methyl Methacrylate Copolymer (1:2)	158
	4.4.2.3.5.2	Polymethacrylic Acid-co-methyl Methacrylate (1:2)	158
4.5		Benefits of Polymers in Small Intestinal Drug Delivery	159
	4.5.1	Hydroxypropyl Methyl Cellulose Phthalate	159
	4.5.2	Hydroxypropyl Methyl Cellulose Acetate Succinate.....	160
	4.5.3	Hydroxypropyl Methyl Cellulose Acetate Maleate.....	160
	4.5.4	Methacrylic Acid Polymers and Copolymers.....	161
	4.5.5	Chitosan	163
	4.5.6	Chitosan and Methacrylic Acid Polymer and Copolymers	163
	4.5.7	Sodium Alginate	164
	4.5.8	Thiolated Tamarind Seed Polysaccharide	164
4.6		Conclusion.....	165
5		Application of Polymers in Transdermal Drug Delivery	175
	5.1	Introduction.....	175
	5.2	Advantages of Drug Delivery <i>via</i> the Transdermal Route.....	177
	5.3	Mechanism of Drug Absorption in Transdermal Drug Delivery Systems	178
	5.4	Factors Affecting Transdermal Permeation	178
	5.4.1	Physicochemical Properties of Penetrant Molecules.....	178
	5.4.2	Physicochemical Properties of the Drug Delivery System	179
	5.4.2.1	Release Characteristics.....	179
	5.4.2.2	Composition of the Drug Delivery Systems	180
	5.4.2.3	Drug Permeation Enhancer	180
	5.4.3	Physiological and Pathological Conditions of the Skin ..	180

5.5	Types of Transdermal Drug Delivery Systems	180
5.5.1	Formulation Aspects	180
5.5.1.1	Matrix Systems	181
5.5.1.2	Reservoir Systems	181
5.5.1.3	Micro-reservoir Systems.....	181
5.5.2	Based on Release Mechanism.....	182
5.5.2.1	Passive Transdermal Drug Delivery Systems.....	182
5.5.2.2	Active Transdermal Drug Delivery Systems.....	182
5.6	Role of Polymers in Transdermal Drug Delivery Systems	182
5.6.1	Matrix Formers	186
5.6.1.1	Crosslinked Polyethylene Glycol	186
5.6.1.2	Acrylic-acid Matrices	186
5.6.1.3	Ethyl Cellulose and Polyvinyl Pyrrolidone	186
5.6.1.4	Hydroxypropyl Methylcellulose	187
5.6.1.5	Chitosan	187
5.6.1.6	Ethyl Vinyl Acetate Copolymer.....	187
5.6.1.7	Gum Copal	188
5.6.1.8	Damar Batu	188
5.6.1.9	Organogels	188
5.6.2	Rate-controlling Membrane.....	188
5.6.2.1	Ethylene Vinyl Acetate Copolymer	189
5.6.2.2	Polyethylene	189
5.6.2.3	Polyurethane	190
5.6.2.4	Crosslinked Sodium Alginate.....	190
5.6.2.5	Copolymer of 2-Hydroxy-3-Phenoxypropylacrylate, 4-Hydroxybutyl Acrylate and Sec-Butyl Tiglate	190
5.6.2.6	Polysulfone, Polyvinylidene Fluoride (Hydrophilic Membrane)	191
5.6.2.7	Polytetrafluoroethylene (Hydrophobic Membrane).....	191

Applications of Polymers in Drug Delivery

5.6.2.8	Crosslinked Polyvinyl Alcohol	191
5.6.2.9	Cellulose Acetate	192
5.6.2.10	Eudragit®	192
5.6.2.11	Chitosan	192
5.6.3	Pressure Sensitive Adhesives	193
5.6.3.1	Polyisobutylenes	193
5.6.3.2	Silicones.....	196
5.6.3.3	Acrylics.....	196
5.6.3.4	Hot-melt Pressure Sensitive Adhesives	198
5.6.3.5	Hydrogel Pressure Sensitive Adhesives	198
5.6.3.6	Hydrophilic Pressure Sensitive Adhesives.....	198
5.6.3.7	Polyurethanes	199
5.6.4	Backing Layer/Membranes.....	199
5.6.5	Release Liner	200
5.6.6	Polymers to Enhance Skin Permeation	201
5.6.6.1	Penetration Enhancers	201
5.6.6.2	Pulsed Delivery	201
5.7	Future Perspectives	202
5.8	Conclusion.....	203
6	Application of Polymers in Peyer's Patch Targeting	211
6.1	Introduction.....	211
6.2	Peyer's Patch Physiology, Structure and Function	215
6.2.1	General Properties and Peyer's Patch Distribution in Different Species	215
6.2.2	M Cell Structure and Function	218
6.3	Strategies for Achieving Effective Delivery to the Peyer's Patch ...	219
6.3.1	General Principles of Peyer's Patch Delivery.....	219
6.3.2	Effect of Particle Size on Peyer's Patch	222
6.4	Peyer's Patch Drug Delivery using Polymeric Carriers	223

6.4.1	Poly(lactide- <i>co</i> -glycolic Acid	224
6.4.2	Poly(lactic Acid	225
6.4.3	Poly-D,L-lactide- <i>co</i> -glycolide	226
6.4.4	Polystyrene	226
6.4.5	Chitosan	227
6.4.6	Other Polymer Carrier	228
6.5	Uptake of Particles by Peyer’s Patches	228
6.6	Targets for Peyer’s Patch Delivery	231
6.6.1	Lectin-mediated Targeting	231
6.6.2	Microbial Protein-mediated Targeting.....	232
6.6.2.1	Yersinia.....	233
6.6.2.2	Salmonella	233
6.6.2.3	Cholera Toxin.....	234
6.6.2.4	Virus Protein.....	234
6.6.3	Vitamin B12 Mediated Targeting	235
6.6.4	Non-Peptide Ligand Mediated Targeting	235
6.6.5	Peptide Ligand Mediated Targeting.....	236
6.6.6	Claudin-4 Mediated Targeting	236
6.6.7	Monoclonal Antibody Mediated Targeting	237
6.6.8	M Cell Homing Peptide Targeting.....	237
6.6.9	Immunoglobulin A Conjugates Targeting.....	238
6.7	Summary and Conclusions.....	238
7	Applications of Polymers in Colon Drug Delivery	251
7.1	Introduction.....	251
7.2	Anatomy of the Colon	252
7.3	Correlation between Physiological Factors and use of Polymers in Colon Drug Delivery Systems.....	253
7.3.1	The pH of the Gastrointestinal Tract	253
7.3.2	Gastrointestinal Transit Time.....	254

Applications of Polymers in Drug Delivery

7.3.3	Colonic Motility	254
7.3.4	Colonic Microflora	255
7.3.5	Colonic Absorption	255
7.4	Advantages of Colon Drug Delivery Systems	256
7.5	Disadvantages of Colon Drug Delivery Systems.....	256
7.6	Polymers for Colon Drug Delivery Systems.....	257
7.6.1	Pectin.....	257
7.6.2	Guar Gum	258
7.6.3	Chitosan	258
7.6.4	Amylose.....	258
7.6.5	Inulin	259
7.6.6	Locust Bean Gum	259
7.6.7	Chondroitin Sulfate	259
7.6.8	Dextran	259
7.6.9	Alginates.....	260
7.6.10	Cyclodextrin	260
7.6.11	Eudragit®	260
7.6.12	Cellulose Ethers	261
7.6.13	Ethyl Cellulose.....	262
7.6.14	Polymers for Enteric Coating.....	262
7.6.15	Polyvinyl Alcohol	262
7.7	Application of Polymers in Colon Drug Delivery Systems.....	263
7.7.1	System Dependent on pH	263
7.7.2	System Dependent on Time.....	266
7.7.2.1	Reservoir Systems with Rupturable Polymeric Coats.....	266
7.7.2.2	Reservoir Systems with Erodible Polymeric Coats	267
7.7.2.3	Reservoir Systems with Diffusive Polymeric Coats.	267

7.7.2.4	Capsular Systems with Release-controlling Polymeric Plugs.....	268
7.7.2.5	Osmotic System	269
7.7.3	Bacterially Triggered System	270
7.7.3.1	Prodrug.....	271
7.7.3.2	Polysaccharide-based Matrix, Reservoirs and Hydrogels	272
7.7.4	Time- and pH-Dependent Systems	273
7.7.5	Pressure Controlled Delivery Systems	274
7.8	Conclusion.....	275
8	Applications of Polymers in Parenteral Drug Delivery	289
8.1	Introduction.....	289
8.2	Parenteral Route for Drug Delivery.....	290
8.2.1	Advantages of Parenteral Administration	292
8.2.2	Disadvantages of Parenteral Administration	293
8.3	In Vivo Distribution of Polymer	293
8.4	Biodegradation	295
8.4.1	Erosion	295
8.4.2	Degradation Processes	296
8.4.2.1	Chemical and Enzymic Oxidation.....	296
8.4.2.2	Chemical and Enzymic Hydrolysis.....	296
8.5	Polymers for Parenteral Delivery.....	298
8.5.1	Non-degradable Polymers.....	299
8.5.2	Biodegradable Polymers.....	300
8.5.2.1	Synthetic Polymers.....	301
8.5.2.1.1	Polyesters	301
8.5.2.1.2	Polylactones	302
8.5.2.1.3	Polyamino acids	303
8.5.2.1.4	Polyphosphazenes.....	303
8.5.2.1.5	Polyorthoesters.....	304

Applications of Polymers in Drug Delivery

	8.5.2.1.6	Polyanhydrides	304
	8.5.2.2	Natural Polymers.....	305
	8.5.2.2.1	Collagen	305
	8.5.2.2.2	Gelatin	306
	8.5.2.2.3	Albumin	307
	8.5.2.2.4	Polysaccharides	307
8.6		Polymeric Drug Delivery Carriers	308
	8.6.1	Polymeric Implants	308
	8.6.2	Microparticles.....	310
	8.6.3	Nanoparticles	311
	8.6.4	Polymeric Micelles.....	311
	8.6.5	Hydrogels	314
	8.6.6	Polymer-drug Conjugates.....	315
8.7		Factors Influencing Polymeric Parenteral Delivery.....	315
	8.7.1	Particle Size.....	315
	8.7.2	Drug Loading	316
	8.7.3	Porosity	316
	8.7.4	Molecular Weight of the Polymer.....	316
	8.7.5	Crystallinity	317
	8.7.6	Hydrophobicity	317
	8.7.7	Drug-polymer Interactions.....	318
	8.7.8	Surface Properties: Charge and Modifications.....	318
8.8		Summary	319
9		Applications of Polymers in Rectal Drug Delivery.....	331
	9.1	Introduction.....	331
	9.2	Rectal Drug Delivery	332
	9.2.1	Anatomy and Physiology of the Rectum	332
	9.2.2	Absorption through the Rectum	332
	9.2.2.1	Mechanism of Absorption	332

	9.2.2.2	Factors Affecting Absorption	333
9.3		Polymers used in Rectal Dosage Forms	333
	9.3.1	Solutions	336
	9.3.2	Semi-solids/Hydrogels	336
	9.3.3	Suppositories	337
	9.3.4	<i>In Situ</i> Gels.....	341
9.4		Conclusion	344
10		Applications of Polymers in Vaginal Drug Delivery	351
10.1		Anatomy and Physiology of the Vagina.....	351
	10.1.1	Vaginal pH.....	352
	10.1.2	Vaginal Microflora.....	353
	10.1.3	Cyclic Changes	353
	10.1.4	Vaginal Blood Supply.....	353
10.2		The Vagina as a Site for Drug Delivery	353
10.3		Vaginal Dosage Forms	355
10.4		Polymers for Vaginal Drug Delivery.....	357
	10.4.1	Polyacrylates.....	357
	10.4.2	Chitosan	360
	10.4.3	Cellulose Derivatives.....	361
	10.4.4	Hyaluronic Acid Derivatives	363
	10.4.5	Carageenan.....	363
	10.4.6	Polyethylene Glycols	363
	10.4.7	Gelatin.....	364
	10.4.8	Thiomers	364
	10.4.9	Poloxamers.....	365
	10.4.10	Pectin and Tragacanth.....	366
	10.4.11	Sodium Alginate	366
	10.4.12	Silicone Elastomers for Vaginal Rings	366
	10.4.13	Thermoplastic Polymers for Vaginal Rings.....	367

Applications of Polymers in Drug Delivery

10.4.14	Miscellaneous	367
10.5	Toxicological Evaluation.....	368
10.6	Conclusion.....	369
11	Application of Polymers in Nasal Drug Delivery	
11.1	Introduction.....	379
11.2	Nasal Anatomy and Physiology	380
11.2.1	Nasal Vestibule	380
11.2.2	Atrium	381
11.2.3	Olfactory Region	381
11.2.4	Respiratory Region	382
11.2.5	Nasopharynx	383
11.3	Biological Barriers in Nasal Absorption	384
11.3.1	Mucus.....	384
11.3.2	Nasal Mucociliary Clearance	384
11.3.3	Enzymic Barrier	385
11.3.4	P-Glycoprotein Efflux Transporters.....	385
11.3.5	Physicochemical Characteristics of the Drug	386
11.4	Toxicity.....	387
11.5	General Considerations about Polymers used in Nasal Drug Delivery	387
11.5.1	Thermoresponsive Polymers	387
11.5.2	Polymers Sensitive to pH	388
11.5.3	Mucoadhesive Polymer	389
11.6	Polymers used in Nasal Drug Delivery	390
11.6.1	Cellulose Derivatives.....	390
11.6.2	Polyacrylates.....	391
11.6.3	Starch	392
11.6.4	Chitosan	392
11.6.5	Gelatin.....	393