

INTRODUCTION	XXI
STUDY OBJECTIVES.....	XXI
REASONS FOR DOING THIS STUDY	XXI
CONTRIBUTIONS TO THE STUDY.....	XXII
SCOPE OF THE STUDY.....	XXII
METHODOLOGY	XXII
INFORMATION SOURCES.....	XXIII
ANALYST CREDENTIALS.....	XXIII
RELATED BCC REPORTS	XXIII
MONTHLY NEWSLETTER.....	XXIV
BCC ON-LINE SERVICES.....	XXIV
INTERNET.....	XXIV
DISCLAIMER	XXIV
 SUMMARY.....	XXV
<i>SUMMARY TABLE U.S. AND WORLD SALES OF ADVANCED DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	XXVI
<i>SUMMARY FIGURE U.S. AND WORLD SALES OF ADVANCED DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS).....</i>	XXVII
 OVERVIEW	1
DOSAGE FORMS	1
DIFFERENT DOSAGE FORMS.....	1
Solid Dosage Forms	1
Semisolid Dosage Forms	1
Pharmaceutical Inserts	1
Liquid Dosage Forms.....	2
Sterile Dosage Forms	2
Radiopharmaceuticals	2
WHAT IS DRUG DELIVERY?	2
ROUTES OF DRUG DELIVERY.....	2
DRUG DELIVERY TECHNOLOGIES.....	3
Sustained Release.....	3
Delayed Release.....	3
Prodrugs.....	3
Implants and Pumps for Drug Delivery	3
Targeted Delivery Systems	4
Receptor-mediated Targeted Drug Delivery.....	5
DRUG DELIVERY SYSTEM CLASSIFICATIONS	5
 REGULATORY ISSUES	6
ROLE OF THE FOOD AND DRUG ADMINISTRATION (FDA) IN DRUG DELIVERY.....	6
CONTROLLED-RELEASE PRODUCTS	6
TRANSDERMAL DRUG DELIVERY SYSTEMS.....	7

INHALATION DRUG DELIVERY SYSTEMS	8
HUMAN GENE THERAPY	8
USE OF EXCIPIENTS.....	9
BIOPHARMACEUTICAL CLASSIFICATIONS	9
BIOPHARMACEUTICAL CLASSIFICATIONS (CONTINUED)	10
 DRUG DELIVERY SYSTEMS AND MANUFACTURERS	11
SUSTAINED RELEASE ORAL DOSAGE FORMS	11
DIFFUSIONAL AND DISSOLUTION SYSTEMS	11
OSMOTIC SYSTEMS	11
ION EXCHANGE RESINS	12
PRODRUGS.....	12
SUSTAINED RELEASE ORAL DOSAGE FORM MARKET LEADERS.....	12
TABLE 1 MAJOR U.S. SUPPLIERS AND MANUFACTURERS OF SUSTAINED RELEASE ORAL DOSAGE FORMS.....	12
TABLE 1 (CONTINUED).....	13
TABLE 2 MARKET SHARE OF U.S. SUPPLIERS AND MANUFACTURERS OF SUSTAINED RELEASE ORAL DOSAGE FORMS, 2002 (%).....	14
FIGURE 1 MARKET SHARE OF U.S. SUPPLIERS AND MANUFACTURERS OF SUSTAINED RELEASE ORAL DOSAGE FORMS, 2002 (%).....	15
SUSTAINED RELEASE INJECTABLE DOSAGE FORMS.....	15
SUSTAINED RELEASE INJECTABLE DOSAGE FORM MARKET LEADERS	16
TABLE 3 MAJOR U.S. SUPPLIERS AND MANUFACTURERS OF SUSTAINED RELEASE INJECTABLE DOSAGE FORMS.....	16
TABLE 3 (CONTINUED).....	17
TABLE 4 MARKET SHARE OF U.S. SUPPLIERS AND MANUFACTURERS OF SUSTAINED RELEASE INJECTABLE DOSAGE FORMS, 2002 (%).....	17
FIGURE 2 MARKET SHARE OF U.S. SUPPLIERS AND MANUFACTURERS OF SUSTAINED RELEASE INJECTABLE DOSAGE FORMS, 2002 (%).....	18
SUSTAINED RELEASE TOPICAL DOSAGE FORMS	18
SUSTAINED RELEASE TOPICAL DOSAGE FORM MARKET LEADERS.....	19
TABLE 5 MAJOR U.S. SUPPLIERS AND MANUFACTURERS OF SUSTAINED RELEASE TOPICAL DOSAGE FORMS.....	19
TABLE 5 (CONTINUED).....	20
TABLE 6 MARKET SHARE OF U.S. SUPPLIERS AND MANUFACTURERS OF SUSTAINED RELEASE TOPICAL DOSAGE FORMS, 2002 (%)	20
FIGURE 3 MARKET SHARE OF U.S. SUPPLIERS AND MANUFACTURERS OF SUSTAINED RELEASE TOPICAL DOSAGE FORMS, 2002 (%)	21
IMPLANTS AND INTRAUTERINE DEVICES (IUDs)	21
IMPLANT AND IUD MARKET LEADERS	22
TABLE 7 MAJOR U.S. SUPPLIERS AND MANUFACTURERS OF IMPLANTS AND IUDS	22
TABLE 8 MARKET SHARE OF U.S. SUPPLIERS AND MANUFACTURERS OF IMPLANTS AND IUDs, 2002 (%)	22
FIGURE 4 MARKET SHAREOF U.S. SUPPLIERS AND MANUFACTURERS OF IMPLANTS AND IUDs, 2002 (%)	23

TRANSDERMAL DRUG DELIVERY SYSTEMS (TDDS)	23
TRANSDERMAL DRUG DELIVERY...(CONTINUED)	24
TRANSDERMAL DRUG DELIVERY SYSTEM (TDDS)	
MARKET LEADERS	25
TABLE 9 MAJOR U.S. SUPPLIERS AND MANUFACTURERS OF TRANSDERMAL DRUG DELIVERY SYSTEMS.....	25
TABLE 10 U.S. MARKET SHARE OF PATCH-DELIVERED DRUGS USED IN TRANSDERMAL DRUG DELIVERY SYSTEMS, 2002 (%).....	26
FIGURE 5 U.S. MARKET SHARE OF PATCH-DELIVERED DRUGS USED IN TRANSDERMAL DRUG DELIVERY SYSTEMS, 2002 (%).....	26
TABLE 11 MARKET SHARE OF U.S. SUPPLIERS AND MANUFACTURERS OF TDDS, 2002 (%).....	27
FIGURE 6 MARKET SHARE OF U.S. SUPPLIERS AND MANUFACTURERS OF TARGETED DELIVERY SYSTEMS.....	28
LIPOSOMES	28
Leading Liposome Companies	28
TABLE 12 MAJOR U.S. LIPOSOME SUPPLIERS AND MANUFACTURERS.....	28
TABLE 12 (CONTINUED).....	29
TABLE 13 U.S. MARKET SHARE OF LIPOSOME DRUGS, 2002 (%).....	29
FIGURE 7 U.S. MARKET SHARE OF LIPOSOME DRUGS, 2002.....	29
TABLE 14 MARKET SHARE OF U.S. LIPOSOME SUPPLIERS AND MANUFACTURERS, 2002 (%).....	30
FIGURE 8 MARKET SHARE OF U.S. LIPOSOME SUPPLIERS AND MANUFACTURERS, 2002 (%).....	30
NANOPARTICLES	31
RESEALED ERYTHROCYTES.....	31
POLYMERS	31
Polymer Market Leaders.....	32
TABLE 15 MAJOR U.S. POLYMER SUPPLIERS AND MANUFACTURERS*.....	32
MONOCLONAL ANTIBODIES	33
Monoclonal Antibody Market Leaders.....	33
TABLE 16 MAJOR U.S. SUPPLIERS AND MANUFACTURERS OF MONOCLONAL ANTIBODIES.....	33
TABLE 17 MARKET SHARE OF U.S. MONOCLONAL ANTIBODY SUPPLIERS AND MANUFACTURERS, 2002 (%).....	34
FIGURE 9 MARKET SHARE FOR U.S. MONOCLONAL ANTIBODY SUPPLIERS AND MANUFACTURERS, 2002 (%).....	34
PEGNOLOGY	34
Pegnology Market Leaders.....	35
TABLE 18 MAJOR U.S. PEGNOLOGY SUPPLIERS AND MANUFACTURERS	35
TABLE 19 MARKET SHARE FOR U.S. PEGNOLOGY SUPPLIERS AND MANUFACTURERS, 2002.....	35
FIGURE 10 MARKET SHARE FOR U.S. PEGNOLOGY SUPPLIERS AND MANUFACTURERS, 2002 (%).....	36
TRANSMUCOSAL DRUG DELIVERY SYSTEMS	36
INHALATION SYSTEMS.....	36
Inhalation System Market Leaders	37
TABLE 20 MAJOR U.S. INHALATION SYSTEM SUPPLIERS AND MANUFACTURERS.....	37

TABLE 20 (CONTINUED).....	38
TABLE 21 MARKET SHARE FOR U.S. INHALATION SYSTEM SUPPLIERS AND MANUFACTURERS, 2002 (%).....	38
FIGURE 11 MARKET SHARE FOR U.S. INHALATION SYSTEMS SUPPLIERS AND MANUFACTURERS, 2002 (%).....	39
BUCCAL DELIVERY SYSTEMS	39
Buccal Delivery Market Leaders	40
TABLE 22 MAJOR U.S. BUCCAL DELIVERY SUPPLIERS AND MANUFACTURERS.....	40
TABLE 23 MARKET SHARE FOR U.S. BUCCAL DELIVERY SYSTEMS SUPPLIERS AND MANUFACTURERS, 2002 (%).....	40
FIGURE 12 MARKET SHARE FOR U.S. BUCCAL DELIVERY SYSTEMS SUPPLIERS AND MANUFACTURERS, 2002 (%).....	41
RECTAL DELIVERY	41
Rectal Delivery Systems Market Leaders	42
TABLE 24 MAJOR U.S. RECTAL DELIVERY SYSTEMS SUPPLIERS AND MANUFACTURERS.....	42
TABLE 25 MARKET SHARE FOR U.S. RECTAL DELIVERY SYSTEMS SUPPLIERS AND MANUFACTURERS, 2002 (%).....	42
FIGURE 13 MARKET SHARE FOR U.S. RECTAL DELIVERY SYSTEMS SUPPLIERS AND MANUFACTURERS, 2002 (%).....	43
VAGINAL DELIVERY	43
Vaginal Delivery Systems Market Leaders.....	44
TABLE 26 MAJOR U.S. VAGINAL DELIVERY SYSTEMS SUPPLIERS AND MANUFACTURERS.....	44
TABLE 27 MARKET SHARE FOR U.S. VAGINAL DELIVERY SYSTEMS SUPPLIERS AND MANUFACTURERS, 2002 (%).....	44
FIGURE 14 MARKET SHARE FOR U.S. VAGINAL DELIVERY SYSTEMS SUPPLIERS AND MANUFACTURERS, 2002 (%).....	45
OCULAR DELIVERY SYSTEMS	45
Ocular Delivery Systems Market Leaders	46
TABLE 28 MAJOR U.S. OCULAR DELIVERY SYSTEMS SUPPLIERS AND MANUFACTURERS.....	46
TABLE 29 MARKET SHARE FOR U.S. OCULAR DELIVERY SYSTEMS SUPPLIERS AND MANUFACTURERS, 2002 (%).....	46
FIGURE 15 MARKET SHARE FOR U.S. SUPPLIERS AND MANUFACTURERS OF OCULAR DELIVERY SYSTEMS, 2002 (%).....	47
VACCINE DELIVERY	47
VACCINE DELIVERY SYSTEMS MARKET LEADERS	47
TABLE 30 MAJOR U.S. SUPPLIERS AND MANUFACTURERS OF VACCINE DELIVERY SYSTEMS	47
OTHERS	47
Currently Available Vaccine Delivery Systems	47
FACTORS GOVERNING DEMAND AND USE.....	48
IMPROVING EFFICACY	48
ENVIRONMENTAL CONCERNS.....	48
PRICES	49
DRUG DELIVERY BENEFITS	49
Compliance.....	49
Efficacy and Safety	50

Benefits for Pharmaceutical and Biotech Companies.....	50
Rescuing Research and Development Dropouts.....	50
Reducing Side Effects	51
TECHNOLOGY	52
NEW DEVELOPMENTS.....	52
TABLE 31 SUSTAINED RELEASE ORAL DOSAGE FORM DEVELOPMENTS	52
TABLE 32 SUSTAINED RELEASE INJECTABLE DOSAGE FORM DEVELOPMENTS.....	53
TABLE 33 SUSTAINED RELEASE TOPICAL DOSAGE FORM DEVELOPMENTS	53
TABLE 34 IMPLANT AND IUD DEVELOPMENTS	53
TABLE 35 TRANSDERMAL DRUG DELIVERY SYSTEM DEVELOPMENTS	54
TABLE 36 LIPOSOME DEVELOPMENTS	54
TABLE 37 NANOPARTICLE DEVELOPMENTS	54
TABLE 38 POLYMER DEVELOPMENTS.....	55
TABLE 39 MONOCLONAL ANTIBODY DEVELOPMENTS.....	55
TABLE 40 PEGNOLOGY DEVELOPMENTS.....	56
TABLE 41 INHALATION SYSTEM DEVELOPMENTS	56
TABLE 41 (CONTINUED).....	57
TABLE 42 BUCCAL DELIVERY DEVELOPMENTS	57
TABLE 43 OCULAR DELIVERY DEVELOPMENTS.....	57
TABLE 44 VACCINE DELIVERY DEVELOPMENTS.....	57
TABLE 44 (CONTINUED).....	58
ANGIOGENIC GENE THERAPY	58
MIT MICROCHIP	58
ISIS CONTROLLED DRUG RELEASE METHOD	59
COCHLEATE DELIVERY VEHICLES	59
DRUG DELIVERY TECHNOLOGY MARKETS.....	59
SUSTAINED RELEASE ORAL DOSAGE FORMS.....	59
TABLE 45 U.S. SALES OF SUSTAINED RELEASE ORAL DOSAGE FORMS, THROUGH 2008 (\$ MILLIONS)	60
FIGURE 16 U.S. SALES OF SUSTAINED RELEASE ORAL DOSAGE FORMS, 2001- 2008 (\$ MILLIONS)	61
SUSTAINED RELEASE INJECTABLE DOSAGE FORMS	61
TABLE 46 U.S. SALES OF SUSTAINED RELEASE INJECTABLE DOSAGE FORMS, THROUGH 2008 (\$ MILLIONS)	62
FIGURE 17 U.S. SALES OF SUSTAINED RELEASE INJECTABLE DOSAGE FORMS 2001-2008 (\$ MILLIONS)	62
SUSTAINED RELEASE TOPICAL DOSAGE FORMS	62
TABLE 47 U.S. SALES OF SUSTAINED RELEASE TOPICAL DOSAGE FORMS, THROUGH 2008 (\$ MILLIONS)	63
FIGURE 18 U.S. SALES OF SUSTAINED RELEASE TOPICAL DOSAGE FORMS, 2001-2008 (\$MILLIONS).....	63
IMPLANTS AND INTRAUTERINE DEVICES (IUDs)	64
TABLE 48 U.S. SALES OF IMPLANTS AND IUDs, THROUGH 2008 (\$ MILLIONS).....	64
FIGURE 19 U.S. SALES OF IMPLANTS AND IUDs, 2001-2008 (\$ MILLIONS).....	65
TRANSDERMAL DRUG DELIVERY SYSTEM (TDDS)	65
TABLE 49 U.S. SALES OF TRANSDERMAL DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS)	66
FIGURE 20 U.S. SALES OF TDDS, 2001-2008 (\$ MILLIONS).....	66

TARGETED DELIVERY SYSTEMS	66
Targeted Delivery Systems (Continued).....	67
<i>TABLE 50 U.S. SALES OF TARGETED DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS)</i>	68
<i>FIGURE 21 U.S. SALES OF TARGETED DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS)</i>	68
TRANSMUCOSAL DELIVERY SYSTEMS	69
<i>TABLE 51 U.S. SALES OF TRANSMUCOSAL DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS)</i>	70
<i>FIGURE 22 U.S. SALES OF TRANSMUCOSAL DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS)</i>	70
PATENTS	71
PATENTS BY TECHNOLOGY	71
<i>TABLE 52 ANNUAL NUMBER OF PATENTS, 1998-2002.....</i>	71
<i>FIGURE 23 ANNUAL NUMBER OF PATENTS, 1998-2002</i>	72
Sustained Release (Oral, Injectable and Topical) Drug Delivery Patents.....	73
<i>TABLE 53 SIGNIFICANT PATENTS FOR SUSTAINED RELEASE (ORAL, INJECTABLE AND TOPICAL) DRUG DELIVERY, 1998-2002.....</i>	73
<i>TABLE 53 (CONTINUED).....</i>	74
<i>TABLE 53 (CONTINUED).....</i>	75
<i>TABLE 54 SIGNIFICANT PATENTS FOR SUSTAINED RELEASE (ORAL, INJECTABLE AND TOPICAL) DRUG DELIVERY, 2003</i>	75
<i>TABLE 54 (CONTINUED).....</i>	76
<i>TABLE 54 (CONTINUED).....</i>	77
Implant and IUD Patents	77
<i>TABLE 55 SIGNIFICANT PATENTS FOR IMPLANTS AND IUDs, 1998-2002.....</i>	77
<i>TABLE 55 (CONTINUED).....</i>	78
<i>TABLE 55 (CONTINUED).....</i>	79
<i>TABLE 56 SIGNIFICANT PATENTS FOR IMPLANTS AND IUDs, 2003</i>	80
<i>TABLE 56 (CONTINUED).....</i>	81
Transdermal Drug Delivery System Patents	82
<i>TABLE 57 SIGNIFICANT PATENTS FOR TRANSDERMAL DRUG DELIVERY SYSTEMS, 1998-2002</i>	82
<i>TABLE 57 (CONTINUED).....</i>	83
<i>TABLE 57 (CONTINUED).....</i>	84
<i>TABLE 58 SIGNIFICANT PATENTS FOR TRANSDERMAL DRUG DELIVERY SYSTEMS, 2003.....</i>	84
Targeted Drug Delivery System Patents.....	85
<i>TABLE 59 SIGNIFICANT PATENTS FOR TARGETED DRUG DELIVERY SYSTEMS, 1998-2002.....</i>	85
<i>TABLE 59 (CONTINUED).....</i>	86
<i>TABLE 59 (CONTINUED).....</i>	87
<i>TABLE 59 (CONTINUED).....</i>	88
<i>TABLE 59 (CONTINUED).....</i>	89
<i>TABLE 59 (CONTINUED).....</i>	90
<i>TABLE 60 SIGNIFICANT PATENTS FOR TARGETED DRUG DELIVERY SYSTEMS, 2003</i>	91
<i>TABLE 60 (CONTINUED).....</i>	92
Inhalation Delivery Patents	93
<i>TABLE 61 SIGNIFICANT PATENTS FOR INHALATION DELIVERY, 1998-2002.....</i>	93

<i>TABLE 61 (CONTINUED)</i>	94
<i>TABLE 62 SIGNIFICANT PATENTS FOR INHALATION DELIVERY, 2003</i>	95
<i>TABLE 62 (CONTINUED)</i>	96
Rectal Delivery Systems Patents	96
<i>TABLE 63 SIGNIFICANT RECTAL DELIVERY SYSTEMS PATENTS, 1998-2002</i>	96
<i>TABLE 63 (CONTINUED)</i>	97
Vaginal Delivery Systems Patents	97
<i>TABLE 64 SIGNIFICANT VAGINAL DELIVERY SYSTEMS PATENTS, 1998-2002</i>	97
<i>TABLE 64 (CONTINUED)</i>	98
<i>TABLE 65 SIGNIFICANT PATENT FOR VAGINAL DELIVERY SYSTEM, 2003</i>	99
Buccal Delivery Systems Patents	99
<i>TABLE 66 SIGNIFICANT PATENTS FOR BUCCAL DELIVERY SYSTEMS, 1998-2002</i>	99
<i>TABLE 66 (CONTINUED)</i>	100
Ocular Delivery Patents	101
<i>TABLE 67 SIGNIFICANT PATENT FOR OCULAR DELIVERY, 2003</i>	101
PATENTS BY COMPANY	101
<i>TABLE 68 ANNUAL NUMBER OF SIGNIFICANT PATENTS, BY COMPANY, 1998-2003</i>	101
<i>TABLE 68 (CONTINUED)</i>	102
<i>TABLE 68 (CONTINUED)</i>	103
Abbott Laboratories.....	103
<i>TABLE 69 ABBOTT LABORATORIES PATENTS, 1998-2003</i>	103
AstraZeneca	104
<i>TABLE 70 ASTRAZENECA PATENTS, 1998-2003</i>	104
Alza Corporation.....	104
<i>TABLE 71 ALZA CORPORATION PATENTS, 1998-2003</i>	104
<i>TABLE 71 (CONTINUED)</i>	105
<i>TABLE 71 (CONTINUED)</i>	106
Alkermes	106
<i>TABLE 72 ALKERMES PATENTS, 1998-2003</i>	106
Aventis Pharmaceuticals.....	107
<i>TABLE 73 AVENTIS PHARMACEUTICALS PATENTS, 1998-2003</i>	107
Atrix Laboratories	107
<i>TABLE 74 ATRIX LABORATORIES PATENTS, 1998-2003</i>	107
Aerogen, Inc.	107
<i>TABLE 75 AEROGEN PATENTS, 1998-2003</i>	107
Aradigm, Inc.	108
<i>TABLE 76 ARADIGM PATENTS, 1998-2003</i>	108
Bayer Corporation	108
<i>TABLE 77 BAYER CORPORATION PATENTS, 1998-2003</i>	108
Bertek, Inc.....	109
<i>TABLE 78 BERTEK PATENTS, 1998-2003</i>	109
Cardinal Health, Inc.....	109
<i>TABLE 79 CARDINAL HEALTH PATENTS, 1998-2003</i>	109
Cydex, Inc.	109
<i>TABLE 80 CYDEX PATENTS, 1998-2003</i>	109
Elan, Inc.....	110
<i>TABLE 81 ELAN PATENTS, 1998-2003</i>	110
Emisphere Technologies.....	110

<i>TABLE 82 EMISPHERE TECHNOLOGIES PATENTS, 1998-2003</i>	110
Eurand Pharmaceuticals.....	110
<i>TABLE 83 EURAND PHARMACEUTICALS PATENTS, 1998-2003</i>	110
Genentech, Inc.	111
<i>TABLE 84 GENENTECH PATENTS, 1998-2003.....</i>	111
Gilead	111
<i>TABLE 85 GILEAD PATENTS, 1998-2003.....</i>	111
Guilford Pharmaceuticals	111
<i>TABLE 86 GUILFORD PHARMACEUTICALS PATENTS, 1998-2003</i>	111
<i>TABLE 86 (CONTINUED).....</i>	112
Medtronic Minimed	112
<i>TABLE 87 MEDTRONIC MINIMED PATENTS, 1998-2003.....</i>	112
Noven Pharmaceuticals.....	112
<i>TABLE 88 NOVEN PHARMACEUTICALS PATENTS, 1998-2003.....</i>	112
Pfizer Inc.....	113
<i>TABLE 89 PFIZER PATENTS, 1998-2003.....</i>	113
Pharmacia	113
<i>TABLE 90 PHARMACIA PATENTS, 1998-2003</i>	113
Protein Design Labs	114
<i>TABLE 91 PROTEIN DESIGN LABS PATENTS, 1998-2003.....</i>	114
Southern Research Institute	114
<i>TABLE 92 SOUTHERN RESEARCH INSTITUTE PATENTS, 1998-2003</i>	114
SkyePharma.....	115
<i>TABLE 93 SKYEPHARMA PATENTS, 1998-2003.....</i>	115
Watson Pharmaceuticals.....	115
<i>TABLE 94 WATSON PHARMACEUTICALS PATENTS, 1998-2003</i>	115
Wyeth	116
<i>TABLE 95 WYETH PATENTS, 1998-2003.....</i>	116
 MARKETS BY DISEASE SEGMENT	117
OVERVIEW	117
<i>TABLE 96 U.S. SALES OF DRUG DELIVERY SYSTEMS BY DISEASE SEGMENT, THROUGH 2008 (\$ MILLIONS)</i>	117
<i>FIGURE 24 U.S. SALES OF DRUG DELIVERY SYSTEMS BY DISEASE SEGMENT, 2001-2008 (\$ MILLIONS).....</i>	118
CARDIOVASCULARS	118
<i>TABLE 97 U.S. SALES OF CARDIOVASCULAR DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS)</i>	118
<i>FIGURE 25 U.S. SALES OF CARDIOVASCULAR DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS).....</i>	118
ONCOLOGY	119
<i>TABLE 98 U.S. SALES OF ONCOLOGY DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	120
<i>FIGURE 26 U.S. SALES OF ONCOLOGY DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS)</i>	120
UROLOGY	120
<i>TABLE 99 U.S. SALES OF UROLOGY DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	121
<i>FIGURE 27 U.S. SALES OF UROLOGY DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS)</i>	121

DIABETES	121
<i>TABLE 100 U.S. SALES OF DIABETES DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	<i>122</i>
<i>FIGURE 28 U.S. SALES OF DIABETES DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS).....</i>	<i>122</i>
RESPIRATORY	122
<i>TABLE 101 U.S. SALES OF RESPIRATORY DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	<i>123</i>
<i>FIGURE 29 U.S. SALES OF RESPIRATORY DRUG DELIVERY SYSTEMS, 2001- 2008 (\$ MILLIONS).....</i>	<i>123</i>
ANTI-INFLAMMATORY AND ALLERGIES	124
<i>TABLE 102 U.S. SALES OF ANTI-INFLAMMATORY AND ALLERGY DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	<i>124</i>
<i>FIGURE 30 U.S. SALES OF ANTI-INFLAMMATORY AND ALLERGY DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS).....</i>	<i>124</i>
ANTIBIOTICS	125
<i>TABLE 103 U.S. SALES OF ANTIBIOTICS DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	<i>125</i>
<i>FIGURE 31 U.S. SALES OF ANTIBIOTICS DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS).....</i>	<i>125</i>
ANTIANXIETY AND ANTIDEPRESSANTS	126
<i>TABLE 104 U.S. SALES OF ANTIANXIETY AND ANTIDEPRESSANT DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	<i>126</i>
<i>FIGURE 32 U.S. SALES OF ANTIANXIETY AND ANTIDEPRESSANT DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS).....</i>	<i>126</i>
HORMONES AND GYNECOLOGY	127
<i>TABLE 105 U.S. SALES OF HORMONE AND GYNECOLOGY DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	<i>127</i>
<i>FIGURE 33 U.S. SALES OF HORMONE AND GYNECOLOGY DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS).....</i>	<i>127</i>
OPHTHALMICS.....	128
<i>TABLE 106 U.S. SALES OF OPHTHALMIC DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	<i>128</i>
<i>FIGURE 34 U.S. SALES OF OPHTHALMIC DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS).....</i>	<i>128</i>
OTHERS	129
<i>TABLE 107 U.S. SALES OF OTHER CATEGORY DRUG DELIVERY SYSTEMS, THROUGH 2008 (\$ MILLIONS).....</i>	<i>129</i>
<i>FIGURE 35 U.S. SALES OF OTHER CATEGORY DRUG DELIVERY SYSTEMS, 2001-2008 (\$ MILLIONS).....</i>	<i>129</i>
Others (Continued)	130
INTERNATIONAL ASPECTS	131
ASIA.....	131
EUROPE.....	132
OVERALL PICTURE.....	132
GLOBAL SUSTAINED RELEASE DOSAGE FORM DRUG DELIVERY SYSTEMS (ORAL, INJECTABLE, TOPICAL)	133

<i>TABLE 108 GLOBAL SALES OF SUSTAINED RELEASE DOSAGE FORM DRUG DELIVERY SYSTEMS (ORAL, INJECTABLE, TOPICAL) BY REGION, THROUGH 2008 (\$ MILLIONS)</i>	133
<i>FIGURE 36 GLOBAL SALES OF SUSTAINED RELEASE DOSAGE FORM DRUG DELIVERY SYSTEMS (ORAL, INJECTABLE, TOPICAL) BY REGION, 2001-2008 (\$ MILLIONS)</i>	134
GLOBAL SALES OF IMPLANTS AND IUD DRUG DELIVERY SYSTEMS	134
<i>TABLE 109 GLOBAL SALES OF IMPLANTS AND IUD DRUG DELIVERY SYSTEMS BY REGION, THROUGH 2008 (\$ MILLIONS)</i>	134
<i>FIGURE 37 GLOBAL SALES OF IMPLANTS AND IUD DRUG DELIVERY SYSTEMS BY REGION, 2001-2008 (\$ MILLIONS)</i>	135
GLOBAL TRANSDERMAL DRUG DELIVERY SYSTEMS	135
<i>TABLE 110 GLOBAL SALES OF TRANSDERMAL DRUG DELIVERY SYSTEMS BY REGION, THROUGH 2008 (\$ MILLIONS)</i>	135
<i>FIGURE 38 GLOBAL SALES OF TRANSDERMAL DRUG DELIVERY SYSTEMS BY REGION, 2001-2008 (\$ MILLIONS)</i>	136
GLOBAL SALES OF TARGETED DRUG DELIVERY SYSTEMS	136
<i>TABLE 111 GLOBAL SALES OF TARGETED DRUG DELIVERY SYSTEMS BY REGION, THROUGH 2008 (\$ MILLIONS)</i>	136
<i>FIGURE 39 GLOBAL SALES OF TARGETED DRUG DELIVERY SYSTEMS BY REGION, 2001-2008 (\$ MILLIONS)</i>	137
GLOBAL TRANSMUCOSAL DRUG DELIVERY SYSTEM SALES	137
<i>TABLE 112 GLOBAL SALES OF TRANSMUCOSAL DRUG DELIVERY SYSTEMS BY REGION, THROUGH 2008 (\$ MILLIONS)</i>	137
<i>FIGURE 40 GLOBAL SALES OF TRANSMUCOSAL DRUG DELIVERY SYSTEMS BY REGION, 2001-2008 (\$ MILLIONS)</i>	138
COMPANY PROFILES	139
ABBOTT LABORATORIES	139
ASTRAZENECA PHARMACEUTICALS	139
ALZA	140
ALKERMES	140
ADVANCED POLYMER PHARMA, INC. (A.P. PHARMA)	140
AVENTIS PHARMACEUTICAL, INC.	141
AKORN, INC.	141
ATRIX LABORATORIES	142
AEROGEN, INC.	142
ANTIGENICS, INC.	143
ARADIGM CORP.	143
ANDRX CORP.	144
BAYER	144
BIOVAIL CORP.	145
BERLEX LABORATORIES, INC.	145
BERTEK PHARMACEUTICALS, INC.	146
BIOSANTE PHARMACEUTICALS, INC.	146

CENTOCOR, INC.	146
CARDINAL HEALTH, INC.	147
CYDEX, INC.	147
ELAN	148
ELAN PHARMACEUTICALS MANAGEMENT CORP.	148
ELAN MEDICAL TECHNOLOGIES	148
EMISPHERE TECHNOLOGIES, INC.	149
ENZON, INC.	149
EURAND	149
GENENTECH, INC.	150
GILEAD	150
GUILFORD PHARMACEUTICALS, INC.	151
KV PHARMACEUTICAL CO.	151
3M PHARMACEUTICALS	151
MEDIMMUNE, INC.	152
NEKTAR THERAPEUTICS	152
NOVEN PHARMACEUTICALS, INC.	153
NOVAVAX, INC.	153
PFIZER	154
PROTEIN DESIGN LABS	154
PHARMACIA	154
SONTRA MEDICAL CORP.	155
SCHERING-PLOUGH	155
SOUTHERN REASEARCH INSTITUTE	156
SKYEPHARMA	156
WATSON PHARMACEUTICALS, INC.	156
WYETH	157