

CHAPTER ONE: INTRODUCTION	1
STUDY GOALS AND OBJECTIVES.....	1
REASONS FOR DOING THE STUDY	1
SCOPE OF REPORT	1
METHODOLOGY	2
INTENDED AUDIENCE.....	2
INFORMATION SOURCES.....	2
ANALYST CREDENTIALS.....	3
RELATED BCC REPORTS	3
BCC ONLINE SERVICES.....	3
DISCLAIMER	4
CHAPTER TWO: SUMMARY.....	5
<i>SUMMARY TABLE GLOBAL MARKET FOR ASTHMA AND COPD</i> <i>DRUGS, THROUGH 2014 (\$ MILLIONS)</i>	5
<i>SUMMARY FIGURE GLOBAL MARKET FOR ASTHMA AND COPD</i> <i>DRUGS, 2007-2014 (\$ MILLIONS)</i>	6
CHAPTER THREE: OVERVIEW	8
INTRODUCTION	8
ASTHMA.....	8
CHRONIC OBSTRUCTIVE PULMONARY DISEASE.....	8
MEDICATION TREATMENT.....	9
CLASSIFICATION OF ASTHMA AND COPD DRUGS	9
Bronchodilators.....	10
Anti-inflammatory Drugs.....	10
Combination Inhaled Corticosteroids and Long-acting Beta-2 Agonists (ICS/LABA).....	11
<i>TABLE 1 MARKETED ASTHMA AND COPD DRUG CLASSES</i>	11
DRUG DELIVERY METHODS	12
Metered-dose Inhaler	12
Dry Powder Inhalers	13
Nebulizers	14
Oral and Injectable Drugs.....	14
DRUG DEVELOPMENT PROCESS.....	15
DISEASE-MODIFYING DRUGS—AN ELUSIVE QUEST.....	15
COMPLEX REGULATORY DRUG APPROVAL PROCESS	16
TECHNICAL ASPECTS IN THE DEVELOPMENT OF INHALED DRUGS	16
REGULATORY ISSUES.....	17
REMOVAL OF CFC-PROPELLED INHALERS	18
FDA DRUG SAFETY WARNINGS	18
INDUSTRY PLAYERS	19
MAJOR DRUG MANUFACTURERS.....	19
SPECIALTY PHARMACEUTICAL COMPANIES.....	19

SMALLER COMPANIES.....	20
COMPETITIVE FACTORS	21
SIGNIFICANT TRENDS.....	22
GLOBAL AGING POPULATION TO LEAD TO INCREASING ASTHMA AND COPD PREVALENCE.....	22
NEW DRUG LAUNCHES TO OFFER ENHANCED TREATMENT OPTIONS.....	22
PATENT EXPIRATIONS OF MAJOR DRUGS AND GENERIC DRUG LAUNCHES TO SLOW MARKET GROWTH.....	23
CHAPTER FOUR: DISEASE OVERVIEW	24
ASTHMA OVERVIEW.....	24
CLASSIFICATION OF ASTHMA	24
<i>TABLE 2 CLASSIFICATION OF ASTHMA BY SYMPTOMS</i>	24
CAUSES AND RISK FACTORS	25
DIAGNOSIS	25
DRUG CLASSES APPROVED IN THE TREATMENT OF ASTHMA AND COPD	26
<i>TABLE 3 ASTHMA AND COPD DRUG CLASSES</i>	26
BRONCHODILATORS	27
ANTI-INFLAMMATORY DRUGS.....	27
COMBINATION THERAPIES OF BRONCHODILATORS AND ANTI-INFLAMMATORY DRUGS	27
MEDICATION TREATMENT ALGORITHMS	28
FIRST LINE OF THERAPY	28
SECOND LINE OF THERAPY	28
CHRONIC OBSTRUCTIVE PULMONARY DISEASE.....	28
CLASSIFICATION OF COPD.....	29
<i>TABLE 4 ASTHMA AND COPD DRUG CLASSES</i>	29
CAUSES AND RISK FACTORS	29
DIAGNOSIS	30
MEDICATION TREATMENT ALGORITHMS	30
MEDICATION TREATMENT ALGORITHMS (CONTINUED).....	31
CHAPTER FIVE: INDUSTRY STRUCTURE AND COMPETITIVE ANALYSIS.....	32
INDUSTRY STRUCTURE	32
TIERS OF COMPETITION	32
<i>TABLE 5 INDUSTRY STRUCTURE—MAJOR COMPETITORS AND MARKETED PRODUCTS</i>	32
<i>TABLE 5 (CONTINUED)</i>	33
MARKET CONCENTRATION AND PRICE SENSITIVITY.....	33
BARRIERS TO ENTRY	34
Market Saturation and Competitiveness	34
Sales and Marketing Capabilities.....	34

Drug Formulation and Delivery.....	35
Complex Regulatory and Drug Approval Process	36
NOTABLE MERGERS AND ACQUISITIONS.....	37
REGULATORY ASPECTS	37
REMOVAL OF CFC-PROPELLED DRUGS AS REQUIRED BY THE MONTREAL PROTOCOL ELIMINATED GENERIC COMPETITION FROM THE U.S. MARKET	37
PATIENT SAFETY ISSUES LED TO MORE STRINGENT LABELING REVISIONS AND GUIDES FOR ASTHMA AND COPD DRUGS	38
COMPETITIVE FACTORS	39
DELIVERY MODE AND CONVENIENCE	39
PRODUCT EFFICACY AND DOSAGE FREQUENCY	40
SAFETY PROFILE	40
COMBINATION DRUGS.....	41
PRICE	41
MARKETING AND SALES EFFECTIVENESS	42
MARKET CHALLENGES	42
TECHNICAL- AND MARKET-SPECIFIC EXPERTISE REQUIRED TO COMPETE IN THIS THERAPEUTIC AREA	42
THE COMPLEX DRUG DEVELOPMENT PROCESS	43
MARKET UNMET NEEDS	43
DISEASE-MODIFYING DRUGS	43
SUPERIOR EFFICACY DRUGS.....	44
IMPROVED SAFETY PROFILE DRUGS.....	44
IMPROVED DRUG DELIVERY MODALITIES.....	44
IMPROVED QUALITY OF LIFE FOR PATIENTS.....	45
MARKET TRENDS.....	45
<i>TABLE 6 MARKET TRENDS IN THE ASTHMA/COPD MEDICATION</i> <i>MARKET</i>	45
INCREASED PREVALENCE OF ASTHMA AND COPD IS EXPECTED TO DRIVE MARKET GROWTH GLOBALLY	46
ENHANCED PATIENT AWARENESS IS EXPECTED TO LEAD TO GREATER DIAGNOSIS AND TREATMENT RATES	46
NEW PRODUCT LAUNCHES WITH ENHANCED CONVENIENCE AND SAFETY PROFILES ARE EXPECTED TO EXPAND THE OVERALL MARKET	46
REMOVAL OF CFC-PROPELLED INHALERS FROM THE MARKET IS EXPECTED TO DRIVE MARKET GROWTH.....	47
CHANGES IN REIMBURSEMENT RATES AFFECT DRUG REVENUES	47

LOSS OF PATENT PROTECTION FOR MAJOR BLOCKBUSTER DRUGS IS EXPECTED TO SLOW THE OVERALL MARKET GROWTH	47
TOTAL MARKET REVENUES AND FORECAST	48
TOTAL MARKET REVENUES	48
<i>TABLE 7 GLOBAL MARKET FOR ASTHMA AND COPD DRUGS, BY SEGMENT, 2008 (\$ MILLIONS)</i>	49
<i>FIGURE 1 GLOBAL MARKET FOR ASTHMA AND COPD DRUGS, BY SEGMENT, 2008 (\$ MILLIONS)</i>	49
MARKET SHARES	50
<i>TABLE 8 GLOBAL MARKET SHARES OF LEADING COMPANIES IN ASTHMA AND COPD MEDICATION, 2008</i>	50
<i>FIGURE 2 GLOBAL MARKET SHARES OF LEADING COMPANIES IN ASTHMA AND COPD MEDICATION, 2008 (%)</i>	51
MARKET FORECAST	51
<i>TABLE 9 GLOBAL MARKET FOR ASTHMA AND COPD DRUGS, THROUGH 2014 (\$ MILLIONS)</i>	52
<i>FIGURE 3 GLOBAL MARKET FOR ASTHMA AND COPD DRUGS, 2007-2014 (\$ MILLIONS)</i>	53
Forecast Assumptions	53
Existing Drugs Revenue Increases	53
Patent Expirations of Major Drugs	54
Expected New Drug Launches	55
Expected New ... (Continued)	56
Expected New ... (Continued)	57
CHAPTER SIX: MARKETS BY DRUG CLASSES	58
BRONCHODILATORS	58
OVERVIEW	58
MARKET REVENUES AND FORECAST	58
<i>TABLE 10 MARKET SHARES OF LEADING COMPANIES SUPPLYING BRONCHODILATORS, 2008</i>	59
<i>FIGURE 4 MARKET SHARES OF LEADING COMPANIES SUPPLYING BRONCHODILATORS, 2008 (%)</i>	59
<i>TABLE 11 GLOBAL MARKET FOR BRONCHODILATORS, THROUGH 2014 (\$ MILLIONS)</i>	60
<i>FIGURE 5 GLOBAL MARKET FOR BRONCHODILATORS, 2007-2014 (\$ MILLIONS)</i>	61
SHORT-ACTING BETA-2 AGONISTS	61
Overview	61
<i>TABLE 12 SHORT-ACTING BETA-2 AGONISTS INDUSTRY STRUCTURE, 2009</i>	62
Market Revenues and Forecast	62
<i>TABLE 13 MARKET SHARES OF LEADING COMPANIES SUPPLYING SHORT-ACTING BETA-2 AGONISTS, 2008 (%)</i>	63

<i>FIGURE 6 MARKET SHARES OF LEADING COMPANIES SUPPLYING SHORT-ACTING BETA-2 AGONISTS, 2008 (%)</i>	64
<i>TABLE 14 GLOBAL MARKET FOR SHORT-ACTING BETA-2 AGONISTS, THROUGH 2014 (\$ MILLIONS)</i>	65
<i>FIGURE 7 GLOBAL MARKET FOR SHORT-ACTING BETA-2 AGONISTS, 2007-2014 (\$ MILLIONS)</i>	65
Products Analysis	66
ProAir HFA	66
<i>TABLE 15 PROAIR HFA ANALYSIS</i>	67
Xopenex	67
<i>TABLE 16 XOPENEX ANALYSIS</i>	68
LONG-ACTING BETA-2 AGONISTS	69
Overview	69
<i>TABLE 17 LONG-ACTING BETA-2 AGONISTS INDUSTRY STRUCTURE, 2009</i>	69
Market Revenues and Forecast	69
Market Revenues and Forecast (Continued)	70
<i>TABLE 18 MARKET SHARES OF LEADING COMPANIES SUPPLYING LONG-ACTING BETA-2 AGONISTS, 2008</i>	71
<i>FIGURE 8 MARKET SHARES OF LEADING COMPANIES SUPPLYING LONG-ACTING BETA-2 AGONISTS, 2008 (%)</i>	71
<i>TABLE 19 GLOBAL MARKET FOR LONG-ACTING BETA-2 AGONISTS, THROUGH 2014 (\$ MILLIONS)</i>	72
<i>FIGURE 9 GLOBAL MARKET FOR LONG-ACTING BETA-2 AGONISTS, 2007-2014 (\$ MILLIONS)</i>	73
Products Analysis	73
Foradil	73
Foradil (Continued).....	74
<i>TABLE 20 FORADIL AEROLIZER ANALYSIS</i>	75
Brovana	75
<i>TABLE 21 BROVANA ANALYSIS</i>	76
ANTICHOLINERGICS AND COMBINATION ANTICHOLINERGICS/SHORT-ACTING BETA-2 AGONISTS.....	76
Overview	76
<i>TABLE 22 ANTICHOLINERGICS AND COMBINATION ANTICHOLINERGICS/SABA INDUSTRY STRUCTURE, 2009</i>	77
Market Revenues and Forecast	77
<i>TABLE 23 MARKET SHARES OF LEADING COMPANIES SUPPLYING ANTICHOLINERGICS, 2008</i>	78
<i>FIGURE 10 MARKET SHARES OF LEADING COMPANIES SUPPLYING ANTICHOLINERGICS, 2008 (%)</i>	79
<i>TABLE 24 GLOBAL MARKET FOR ANTICHOLINERGICS, THROUGH 2014 (\$ MILLIONS)</i>	80

<i>FIGURE 11 GLOBAL MARKET FOR ANTICHOLINERGICS, 2007-2014</i>	
(\$ MILLIONS).....	80
Products Analysis	81
Spiriva	81
<i>TABLE 25 SPIRIVA ANALYSIS</i>	82
ANTI-INFLAMMATORY DRUGS	82
OVERVIEW	82
MARKET REVENUES AND FORECAST	82
<i>TABLE 26 MARKET SHARES OF LEADING COMPANIES</i>	
SUPPLYING ANTI-INFLAMMATORY DRUGS, 2008	83
<i>FIGURE 12 MARKET SHARES OF LEADING COMPANIES</i>	
SUPPLYING ANTI-INFLAMMATORY DRUGS, 2008 (%).....	84
<i>TABLE 27 GLOBAL MARKET FOR ANTI-INFLAMMATORY DRUGS,</i>	
<i>THROUGH 2014 (\$ MILLIONS)</i>	85
<i>FIGURE 13 GLOBAL MARKET FOR ANTI-INFLAMMATORY DRUGS,</i>	
<i>THROUGH 2014 (\$ MILLIONS)</i>	85
INHALED CORTICOSTEROIDS	86
Overview	86
<i>TABLE 28 INHALED CORTICOSTEROIDS INDUSTRY STRUCTURE,</i>	
2009.....	86
Market Revenues and Forecast	87
<i>TABLE 29 MARKET SHARES OF LEADING COMPANIES</i>	
SUPPLYING INHALED CORTICOSTEROIDS, 2008 (%).....	88
<i>FIGURE 14 MARKET SHARES OF LEADING COMPANIES</i>	
SUPPLYING INHALED CORTICOSTEROIDS, 2008 (%).....	88
<i>TABLE 30 GLOBAL MARKET FOR INHALED CORTICOSTEROIDS,</i>	
<i>THROUGH 2014 (\$ MILLIONS)</i>	89
<i>FIGURE 15 GLOBAL MARKET FOR INHALED CORTICOSTEROIDS,</i>	
2007-2014 (\$ MILLIONS).....	90
Products Analysis	90
Pulmicort.....	90
<i>TABLE 31 PULMICORT ANALYSIS</i>	91
Flovent/Flixotide.....	92
<i>TABLE 32 FLOVENT ANALYSIS</i>	93
LEUKOTRIENE MODIFIERS	93
Overview	93
<i>TABLE 33 LONG-ACTING BETA-2 AGONISTS INDUSTRY</i>	
<i>STRUCTURE, 2009</i>	94
Market Revenues and Forecast	94
<i>TABLE 34 MARKET SHARES OF LEADING COMPANIES</i>	
SUPPLYING LEUKOTRIENE MODIFIERS, 2008 (%)	95
<i>FIGURE 16 MARKET SHARES OF LEADING COMPANIES</i>	
SUPPLYING LEUKOTRIENE MODIFIERS, 2008 (%)	95

<i>TABLE 35 GLOBAL MARKET FOR LEUKOTRIENE MODIFIERS, THROUGH 2014 (\$ MILLIONS)</i>	96
<i>FIGURE 17 GLOBAL MARKET FOR LEUKOTRIENE MODIFIERS, THROUGH 2014 (\$ MILLIONS)</i>	97
Product Analysis.....	97
Singulair.....	97
<i>TABLE 36 SINGULAIR ANALYSIS</i>	98
BIOLOGICAL DRUGS.....	99
Overview	99
Market Revenues and Forecast	99
<i>TABLE 37 GLOBAL MARKET FOR BIOLOGICAL DRUGS, THROUGH 2014 (\$ MILLIONS)</i>	100
<i>FIGURE 18 GLOBAL MARKET FOR BIOLOGICAL DRUGS, 2007-2014 (\$ MILLIONS)</i>	100
Product Analysis.....	101
Xolair	101
<i>TABLE 38 XOLAIR ANALYSIS</i>	102
COMBINATION ICS/LABA DRUGS.....	102
OVERVIEW	102
<i>TABLE 39 COMBINATION ICS/LABA INDUSTRY STRUCTURE, 2009</i>	103
Market Revenues and Forecast	103
<i>TABLE 40 MARKET SHARES OF LEADING COMPANIES SUPPLYING COMBINATION ICS/LABA, 2008</i>	104
<i>FIGURE 19 MARKET SHARES OF LEADING COMPANIES SUPPLYING COMBINATION ICS/LABA, 2008 (%)</i>	104
Market Revenues and Forecast (Continued)	105
<i>TABLE 41 GLOBAL MARKET FOR COMBINATION ICS/LABA DRUGS, THROUGH 2014 (\$ MILLIONS)</i>	106
<i>FIGURE 20 GLOBAL MARKET FOR COMBINATION ICS/LABA DRUGS, 2007-2014 (\$ MILLIONS)</i>	106
Products Analysis	107
Advair/Seretide	107
<i>TABLE 42 ADVAIR/SERETIDE ANALYSIS</i>	108
Symbicort	108
Symbicort (Continued).....	109
<i>TABLE 43 SYMBICORT ANALYSIS</i>	110
CHAPTER SEVEN: MARKETS BY DISEASE	111
ASTHMA DRUGS MARKET.....	111
ASTHMA DRUGS	111
MARKET REVENUES	111
<i>TABLE 44 GLOBAL MARKET FOR ASTHMA AND COPD PRESCRIPTION DRUGS BY DISEASE, 2008 (\$ MILLIONS/%)</i>	112
<i>FIGURE 21 GLOBAL MARKET FOR ASTHMA AND COPD PRESCRIPTION DRUGS BY DISEASE, 2008 (%)</i>	113

MARKET SHARES	113
<i>TABLE 45 MARKET SHARES OF LEADING COMPANIES</i>	
<i>SUPPLYING THE ASTHMA DRUGS MARKET, 2008</i>	114
<i>FIGURE 22 MARKET SHARES OF LEADING COMPANIES</i>	
<i>SUPPLYING THE ASTHMA DRUGS MARKET, 2008 (%)</i>	114
REVENUE FORECAST.....	115
New Branded Drugs Launches	115
Generic Drug Launches.....	116
<i>TABLE 46 GLOBAL MARKET ASTHMA PRESCRIPTION DRUGS,</i>	
<i>THROUGH 2014 (\$ MILLIONS)</i>	117
<i>FIGURE 23 GLOBAL MARKET ASTHMA PRESCRIPTION DRUGS,</i>	
<i>2007-2014 (\$ MILLIONS)</i>	117
CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) DRUGS	
MARKET.....	118
COPD DRUGS.....	118
MARKET OVERVIEW.....	118
<i>TABLE 47 GLOBAL MARKET FOR ASTHMA AND COPD</i>	
<i>PRESCRIPTION DRUGS BY DISEASE, 2008 (\$ MILLIONS)</i>	119
MARKET SHARES	119
<i>TABLE 48 MARKET SHARES OF LEADING COMPANIES</i>	
<i>SUPPLYING COPD DRUGS, 2008 (%)</i>	119
<i>FIGURE 24 MARKET SHARES OF LEADING COMPANIES</i>	
<i>SUPPLYING COPD DRUGS, 2008 (%)</i>	120
REVENUE FORECAST.....	120
New Branded Drug Launches.....	120
New Branded Drug Launches (Continued).....	121
Generic Drug Launches.....	122
<i>TABLE 49 GLOBAL MARKET FOR COPD PRESCRIPTION DRUGS,</i>	
<i>THROUGH 2014 (\$ MILLIONS)</i>	123
<i>FIGURE 25 GLOBAL MARKET FOR COPD PRESCRIPTION DRUGS,</i>	
<i>2007-2014 (\$ MILLIONS)</i>	123
CHAPTER EIGHT: MARKETS BY GEOGRAPHICAL REGIONS.....	124
USA.....	124
MARKET OVERVIEW: PRODUCTS, SIGNIFICANT ASPECTS ...	124
Market Overview	124
<i>TABLE 50 MARKET SHARES OF LEADING COMPANIES IN THE U.S.</i>	
<i>SUPPLYING ASTHMA AND COPD PRESCRIPTION DRUGS, 2008</i>	
<i>(%)</i>	124
<i>FIGURE 26 MARKET SHARES OF LEADING COMPANIES IN THE</i>	
<i>U.S. SUPPLYING ASTHMA AND COPD PRESCRIPTION DRUGS,</i>	
<i>2008 (%)</i>	125
Products	125
Significant Aspects	126
REVENUE FORECAST.....	126

Revenue forecast (Continued)	127
<i>TABLE 51 UNITED STATES MARKET FOR ASTHMA AND COPD PRESCRIPTION DRUGS, THROUGH 2014 (\$ MILLIONS)</i>	128
<i>FIGURE 27 UNITED STATES MARKET FOR ASTHMA AND COPD PRESCRIPTION DRUGS, 2007-2014 (\$ MILLIONS)</i>	129
EUROPEAN UNION	129
MARKET OVERVIEW: PRODUCTS, SIGNIFICANT ASPECTS ...	129
Market Overview	129
<i>TABLE 52 MARKET SHARES OF LEADING COMPANIES IN THE EUROPEAN UNION SUPPLYING ASTHMA AND COPD PRESCRIPTION DRUGS, 2008 (%)</i>	130
<i>FIGURE 28 MARKET SHARES OF LEADING COMPANIES IN THE EUROPEAN UNION SUPPLYING ASTHMA AND COPD PRESCRIPTION DRUGS, 2008 (%)</i>	130
Products	131
Significant Aspects	131
REVENUE FORECAST	132
<i>TABLE 53 EU MARKET FOR ASTHMA AND COPD PRESCRIPTION DRUGS, THROUGH 2014. (\$ MILLIONS)</i>	133
<i>FIGURE 29 EU MARKET FOR ASTHMA AND COPD PRESCRIPTION DRUGS, 2007-2014 (\$ MILLIONS)</i>	134
REST OF THE WORLD MARKET	134
MARKET OVERVIEW: PRODUCTS, SIGNIFICANT ASPECTS ...	134
Market Overview	134
<i>TABLE 54 MARKET SHARES OF LEADING COMPANIES SUPPLYING ASTHMA AND COPD PRESCRIPTION DRUGS TO ROW, 2008 (%)</i>	135
<i>FIGURE 30 MARKET SHARES OF LEADING COMPANIES SUPPLYING ASTHMA AND COPD PRESCRIPTION DRUGS TO ROW, 2008 (%)</i>	135
Products	136
Significant Aspects	136
REVENUE FORECAST	136
<i>TABLE 55 REST OF WORLD MARKET FOR ASTHMA AND COPD PRESCRIPTION DRUGS, THROUGH 2014 (\$ MILLIONS)</i>	137
<i>FIGURE 31 REST OF WORLD MARKET FOR ASTHMA AND COPD PRESCRIPTION DRUGS, 2007-2014 (\$ MILLIONS)</i>	138
CHAPTER NINE: PIPELINE REVIEW.....	139
PIPELINE OVERVIEW.....	139
BIOLOGICAL DRUGS.....	139
PDE-4 (PHOSPHODIESTERASE-4) INHIBITORS	139
CHEMOKINE RECEPTOR ANTAGONISTS	140
CRTH2 RECEPTOR ANTAGONISTS	140
KINASE INHIBITORS	141

BRONCHODILATORS	141
DRUGS FILED FOR REGULATORY APPROVAL.....	141
DRUGS IN PHASE III CLINICAL TRIALS	142
DRUGS IN PHASE II CLINICAL TRIALS	143
<i>TABLE 56 LONG-ACTING BRONCHODILATORS PIPELINE, 2009.....</i>	<i>144</i>
<i>TABLE 56 (CONTINUED).....</i>	<i>145</i>
COMBINATION DRUGS OF INHALED CORTICOSTEROIDS AND LONG-ACTING BRONCHODILATORS	145
DRUGS FILED FOR REGULATORY APPROVAL.....	145
DRUGS IN PHASE III CLINICAL TRIALS	146
DRUGS IN PHASE II CLINICAL TRIALS	146
<i>TABLE 57 COMBINATION ICS/LABA DRUGS PIPELINE, 2009.....</i>	<i>147</i>
<i>TABLE 57 (CONTINUED).....</i>	<i>148</i>
OTHER DRUG CLASSES	148
DRUGS FILED FOR REGULATORY APPROVAL.....	148
DRUGS IN PHASE II CLINICAL TRIALS	149
5-Lipoxygenase (5-LO) Inhibitors	149
Phosphodiesterase-4 (PDE-4) Inhibitors	149
CRTH2 Receptor Antagonists	149
Biological Drugs.....	150
Monoclonal Antibodies.....	150
Immunotherapy/Vaccines	150
RNA-silencing	151
Stem Cells Therapy	151
Other Mechanisms.....	152
<i>TABLE 58 BIOLOGICAL DRUGS PIPELINE, 2009.....</i>	<i>153</i>
<i>TABLE 58 (CONTINUED).....</i>	<i>154</i>
<i>TABLE 59 OTHER DRUG CLASSES PIPELINE, PHASE II, 2009.....</i>	<i>154</i>
<i>TABLE 59 (CONTINUED).....</i>	<i>155</i>
DRUGS IN PHASE I CLINICAL TRIALS	155
Drugs in Phase I Clinical Trials (Continued).....	156
<i>TABLE 60 OTHER DRUG CLASSES PIPELINE, PHASE I, 2009</i>	<i>157</i>
CHAPTER TEN: COMPANY PROFILES	158
ABBOTT LABORATORIES.....	158
AEROVANCE, INC.....	158
ALKERMES, INC.	159
ALMIRALL, S.A.....	159
ALTAIR THERAPEUTICS, INC.....	160
AMGEN INC.	160
ARGENTA DISCOVERY, LTD.	161
ASTRAZENECA.....	162
ASTRAZENECA PHARMACEUTICALS, LP	162
BOEHRINGER INGELHEIM GMBH	163
BOEHRINGER INGELHEIM PHARMACEUTICALS, INC.	163

CYTOS BIOTECHNOLOGY AG	164
FOREST LABORATORIES, INC.	165
GENENTECH, INC.	165
GLAXO WELLCOME U.K., LTD.	166
GLAXOSMITHKLINE U.S.	166
ICAGEN, INC.	167
MEDICINOVA	168
MEDIMMUNE	168
MERCK & CO., INC.	169
NOVARTIS PHARMA	169
NOVARTIS CORPORATION	169
NOVARTIS PHARMACEUTICALS CORPORATION	169
NYCOMED INTERNATIONAL MANAGEMENT GMBH	170
OSIRIS THERAPEUTICS, INC.	171
PFIZER, INC.	172
SCHERING-PLOUGH CORPORATION	172
SEPRACOR, INC.	173
SKYEPHARMA PLC	174
TEVA PHARMACEUTICAL INDUSTRIES, LTD.	174
TEVA PHARMACEUTICALS USA.....	174
THERAVANCE	175
TOPIGEN PHARMACEUTICALS, INC.	176
VECTURA GROUP PLC	176
VECTURA GROUP PLC (CONTINUED)	177