

CHAPTER ONE: INTRODUCTION.....	1
STUDY GOALS AND OBJECTIVES.....	1
REASONS FOR DOING THE STUDY .....	1
INTENDED AUDIENCE.....	2
SCOPE OF REPORT .....	2
METHODOLOGY .....	3
INFORMATION SOURCES.....	3
RELATED BCC REPORTS .....	3
ANALYST CREDENTIALS.....	4
BCC RESEARCH ONLINE SERVICES .....	4
DISCLAIMER .....	4
CHAPTER TWO: SUMMARY.....	5
<i>SUMMARY TABLE GLOBAL VALUE OF BIOLOGIC IMAGING</i> <i>REAGENTS, BY TYPE, THROUGH 2013 (\$ MILLIONS)</i> .....	5
<i>SUMMARY FIGURE GLOBAL VALUE OF BIOLOGIC IMAGING</i> <i>REAGENTS, BY TYPE, 2006-2013 (\$ MILLIONS)</i> .....	6
SUMMARY (CONTINUED) .....	7
CHAPTER THREE: OVERVIEW .....	8
INTRODUCTION .....	8
BIOLOGIC IMAGING TECHNOLOGIES COVERED IN THIS REPORT.....	9
<i>TABLE 1 SCOPE OF THIS REPORT</i> .....	9
MARKET POTENTIAL OF BIOLOGIC REAGENTS PRODUCTS .....	9
<i>TABLE 2 GLOBAL VALUE OF BIOLOGIC IMAGING REAGENTS, BY</i> <i>TECHNOLOGY, THROUGH 2013 (\$ MILLIONS)</i> .....	10
<i>TABLE 3 GLOBAL VALUE OF BIOLOGIC IMAGING REAGENTS, BY</i> <i>END USER MARKET, THROUGH 2013 (\$ MILLIONS)</i> .....	11
FORCES DRIVING BIOLOGIC IMAGING REAGENTS INDUSTRY GROWTH .....	12
<i>TABLE 4 BIOLOGIC IMAGING REAGENTS GROWTH DRIVING</i> <i>FORCES</i> .....	12
FORCES DRIVING BIOLOGIC ... (CONTINUED).....	13
LIFE CYCLE STATUS OF BIOLOGIC IMAGING REAGENTS TECHNOLOGIES.....	14
<i>TABLE 5 LIFE CYCLE STAGE OF BIOLOGIC IMAGING REAGENTS</i> .....	14
THE BIOLOGIC IMAGING REAGENTS INDUSTRY .....	15
<i>TABLE 6 BIOLOGIC IMAGING REAGENTS KEY COMPETITORS</i> .....	16
THE BIOLOGIC IMAGING REAGENTS ... (CONTINUED).....	17
CHAPTER FOUR: BIOLOGIC IMAGING TECHNOLOGIES.....	18
IMAGING REAGENT TYPES.....	18
<i>TABLE 7 KEY BIOLOGIC IMAGING REAGENT TYPES</i> .....	18

<i>IN-VIVO</i> IMAGING MODALITIES .....	19
<i>TABLE 8 IN-VIVO IMAGING MODALITIES</i> .....	20
<i>TABLE 9 COMPARISON OF IN-VIVO IMAGING MODALITIES</i> .....	20
<i>IN-VIVO</i> IMAGING MODALITIES (CONTINUED) .....	21
MOLECULAR IMAGING .....	22
<i>IN-VITRO</i> IMAGING/DETECTION .....	23
<i>TABLE 10 APPLICATIONS OF IN-VITRO BIOLOGIC IMAGING</i> .....	24
TRENDS IN <i>IN-VIVO</i> IMAGING .....	24
<i>TABLE 11 KEY TRENDS FOR IN-VIVO IMAGING</i> .....	24
TRENDS IN <i>IN-VIVO</i> IMAGING (CONTINUED) .....	25
BIOLOGIC IMAGING REAGENTS TECHNOLOGIES .....	26
NANOPARTICLES .....	26
<i>TABLE 12 NANOPARTICLES IN IMAGING APPLICATIONS</i> .....	27
Nanoparticles (Continued) .....	28
<i>TABLE 13 COMPARISON OF ANTIBODY CONJUGATE</i>	
NANOPARTICLES.....	29
FLUORESCENT DYES AND PROBES.....	29
<i>TABLE 14 FLUORESCENT DYES AND PROBES</i> .....	29
Fluorescent Dyes and Probes (Continued) .....	30
<i>TABLE 15 ADVANTAGES OF FLUORESCENCE VERSUS</i>	
TRADITIONAL METHODS.....	31
<i>TABLE 16 FLUORESCENT DYE PERFORMANCE CRITERIA</i> .....	32
FLUORESCENT PROTEINS .....	33
<i>TABLE 17 TYPES OF FLUORESCENT PROTEINS</i> .....	33
Fluorescent Proteins (Continued) .....	34
Genetically Engineering Fluorescent Proteins.....	35
<i>TABLE 18 PHOTOACTIVABLE AND PHOTOCONVERTIBLE</i>	
FLUORESCENT PROTEIN TYPES .....	35
Engineered Fluorescent Cell Lines.....	36
Emerging Fluorescent Protein Applications .....	36
<i>TABLE 19 EMERGING APPLICATIONS OF FLUORESCENT</i>	
PROTEINS.....	37
Comparison of Fluorescent Proteins with Fluorescent	
Dyes .....	37
<i>TABLE 20 FLUORESCENT PROTEINS VERSUS DYES</i> .....	38
Technology Challenges .....	38
<i>TABLE 21 TECHNOLOGY CHALLENGES FOR FLUORESCENT</i>	
PROTEINS.....	38
SUPERMOLECULES .....	39
<i>TABLE 22 CLASSIFICATION OF IMAGING SUPERMOLECULES</i> .....	39
SUPERMOLECULES (Continued).....	40
<i>FIGURE 1 MOLECULAR ENGINEERING OF DENDRIMER IMAGING</i>	
SUPERMOLECULES.....	41
QUANTUM DOTS.....	42

<i>TABLE 23 COMPARISON OF QUANTUM DOTS, FLUORESCENT DYES AND FLUORESCENT PROTEINS</i> .....	42
<i>FIGURE 2 QUANTUM DOT SPECTRA</i> .....	43
<i>FIGURE 3 FLUORESCENT DYE SPECTRA</i> .....	43
Quantum Dots (Continued).....	44
<i>TABLE 24 BIOLOGIC IMAGING APPLICATIONS OF QUANTUM DOTS</i> .....	45
RADIOPHARMACEUTICALS .....	45
CONTRAST REAGENTS.....	46
Contrast Reagents (Continued).....	47
Contrast Reagents (Continued).....	48
EMERGING CLASSES OF IMAGING REAGENTS .....	49
COMPONENTS OF ADVANCED IMAGING REAGENT TECHNOLOGY.....	49
<i>FIGURE 4 THREE COMPONENTS OF ADVANCED IMAGING REAGENT TECHNOLOGY</i> .....	50
ADVANCED IMAGING REAGENT FUNCTIONS .....	50
<i>TABLE 25 EMERGING ADVANCED BIOLOGIC IMAGING REAGENT FUNCTIONS</i> .....	51
Dual Modality Reagents.....	51
Multifunctional Reagents.....	51
Multifunctional Reagents (Continued) .....	52
Multiplexed Reagents.....	53
BIOLOGIC IMAGING REAGENTS MANUFACTURING COSTS .....	53
<i>FIGURE 5 MANUFACTURING COSTS OF IMAGING REAGENT CLASSES</i> .....	53
BIOLOGIC IMAGING REAGENTS ... (CONTINUED).....	54
COMPARISON OF IMAGING REAGENT TECHNOLOGY PLATFORMS.....	55
<i>TABLE 26 LIFE CYCLE OF BIOLOGIC IMAGING REAGENT TECHNOLOGIES</i> .....	55
<i>TABLE 27 TECHNOLOGY STATUS OF BIOLOGIC IMAGING REAGENT PLATFORMS</i> .....	56
<i>TABLE 28 TECHNOLOGY CHALLENGES FOR IN-VIVO IMAGING REAGENTS</i> .....	57
COMPARISON OF IMAGING ... (CONTINUED) .....	58
CHAPTER 5: BIOLOGIC IMAGING REAGENTS APPLICATIONS .....	59
OVERVIEW.....	59
<i>TABLE 29 BIOLOGIC IMAGING REAGENTS APPLICATIONS</i> .....	59
<i>TABLE 30 SIGNIFICANCE OF BIOLOGIC IMAGING REAGENTS TO     LIFE SCIENCES AND MEDICAL INDUSTRIES</i> .....	60
<i>TABLE 31 USE OF BIOLOGIC IMAGING REAGENTS BY MARKET     SEGMENT</i> .....	60
<i>TABLE 31 (CONTINUED)</i> .....	61
<i>TABLE 32 APPLICATIONS WITHIN MARKET SEGMENTS</i> .....	61

RESEARCH AND DEVELOPMENT .....	62
<i>TABLE 33 R&amp;D TOOLS</i> .....	63
<i>TABLE 34 EMERGING APPLICATIONS FOR BIOLOGIC IMAGING</i>	
<i>REAGENTS IN R&amp;D TOOLS</i> .....	63
DRUG DISCOVERY AND DEVELOPMENT .....	64
<i>TABLE 35 DRUG DISCOVERY &amp; DEVELOPMENT</i> .....	64
INFLUENCE OF IMAGING TECHNOLOGY ON DRUG	
DEVELOPMENT .....	65
ATTRITION RATE OF LEAD COMPOUNDS .....	66
<i>FIGURE 6 ATTRITION RATE OF DRUG CANDIDATES DURING</i>	
<i>DRUG DEVELOPMENT</i> .....	67
FLUORESCENT PROTEIN APPLICATIONS IN DRUG	
DISCOVERY .....	67
<i>IN-VIVO SMALL ANIMAL IMAGING APPLICATIONS</i> .....	68
<i>TABLE 36 COMPARISON OF SMALL ANIMAL IMAGING</i>	
<i>MODALITIES</i> .....	69
<i>TABLE 37 OUTSTANDING MARKET NEEDS FOR SMALL ANIMAL</i>	
<i>IMAGING</i> .....	70
MICRODOSING .....	70
Biomarkers for Microdosing.....	71
<i>TABLE 38 BIOMARKERS FOR MICRODOSING</i> .....	71
Regulatory Requirements for Microdosing.....	72
Imaging Modalities for Microdosing .....	73
<i>TABLE 39 MICRODOSING IMAGING MODALITIES</i> .....	73
Status of Microdosing .....	74
DIAGNOSTICS .....	75
INTRODUCTION .....	75
<i>TABLE 40 DIAGNOSTICS IMAGING REAGENTS APPLICATIONS</i> .....	75
<i>TABLE 40 (CONTINUED)</i> .....	76
DIAGNOSTIC APPLICATIONS OF IMAGING REAGENTS.....	76
<i>TABLE 41 DIAGNOSTIC APPLICATIONS OF SELECTED IMAGING</i>	
<i>REAGENTS</i> .....	77
Fluorescent Dyes, Probes and Tags .....	77
Nanoparticles.....	77
Supermolecules .....	78
Imaging Radiopharmaceuticals .....	78
Contrast Reagents .....	79
MOLECULAR IMAGING .....	79
Introduction .....	79
<i>TABLE 42 CLINICAL APPLICATIONS FOR IN VIVO MOLECULAR</i>	
<i>IMAGING</i> .....	80
Optical Molecular Imaging Reagents Status.....	80
<i>TABLE 43 FLUORESCENCE IMAGING REAGENTS PIPELINE</i>	
<i>STATUS</i> .....	81

PET/SPECT Molecular Imaging Reagents Status .....	81
<i>TABLE 44 PET/SPECT IMAGING REAGENTS PIPELINE STATUS</i> .....	81
<i>TABLE 44 (CONTINUED)</i> .....	82
PET/SPECT ... (Continued).....	83
Biological Processes Associated with Molecular PET	
Imaging Reagents.....	84
<i>TABLE 45 PET IMAGING REAGENT APPLICATIONS</i> .....	85
Biological Processes ... (Continued) .....	86
CASE STUDY: ALZHEIMER'S DISEASE IMAGING	
REAGENT OPPORTUNITIES.....	87
<i>FIGURE 7 ALZHEIMER'S DISEASE'S PATHOLOGY PROGRESSION</i> .....	87
MR IMAGING REAGENTS .....	88
<i>TABLE 46 EXISTING AND EMERGING MRI IMAGING REAGENTS</i>	
<i>STATUS</i> .....	88
<i>TABLE 46 (CONTINUED)</i> .....	89
ULTRASOUND IMAGING REAGENTS .....	90
NANOPARTICLES IN DIAGNOSTICS.....	91
<i>TABLE 47 NANOPARTICLE IN-VIVO DIAGNOSTICS PIPELINE</i> .....	91
<i>TABLE 48 NANOSPHERE IN-VITRO DIAGNOSTICS REAGENTS</i>	
<i>PIPELINE</i> .....	92
HYBRID DIAGNOSTIC/THERAPEUTIC APPLICATIONS .....	93
<i>TABLE 49 HYBRID IMAGING/THERAPEUTIC APPLICATIONS</i> .....	93
Hybrid Diagnostic/... (Continued).....	94
CHAPTER SIX: BIOLOGIC IMAGING REAGENTS INDUSTRY	
STRUCTURE.....	95
MEDICAL IMAGING INSTRUMENT INDUSTRY.....	95
<i>TABLE 50 COMPETITIVE FOCUS OF MAJOR MEDICAL IMAGING</i>	
<i>COMPANIES</i> .....	96
INNOVATION WITHIN THE IMAGING REAGENT INDUSTRY.....	97
ROLE OF CORE IMAGING FACILITIES .....	97
ROLE OF STRATEGIC ALLIANCES .....	97
<i>TABLE 51 RECENT IMAGING REAGENT STRATEGIC ALLIANCES</i> .....	97
<i>TABLE 51 (CONTINUED)</i> .....	98
<i>TABLE 51 (CONTINUED)</i> .....	99
Role of Strategic Alliances (Continued).....	100
<i>TABLE 52 BIOLOGIC IMAGING REAGENTS INDUSTRY</i>	
<i>ACQUISITIONS, 2005-2008</i> .....	101
<i>TABLE 52 (CONTINUED)</i> .....	102
<i>TABLE 52 (CONTINUED)</i> .....	103
<i>TABLE 52 (CONTINUED)</i> .....	104
2005 .....	104
2006 .....	104
2006 (Continued).....	105
2007 .....	106

2008.....	107
SPECIALIZED INDUSTRY SECTORS.....	108
FLUORESCENT DYES AND PROBES.....	108
<i>TABLE 53 FLUORESCENT DYES AND PROBES KEY COMPETITORS.....</i>	<i>108</i>
QUANTUM DOTS.....	109
<i>TABLE 54 QUANTUM DOTS KEY COMPETITORS.....</i>	<i>109</i>
<i>TABLE 54 (CONTINUED).....</i>	<i>110</i>
CONTRAST REAGENTS.....	111
<i>TABLE 55 CONTRAST REAGENTS KEY COMPETITORS .....</i>	<i>111</i>
RADIOPHARMACEUTICALS .....	112
<i>TABLE 56 RADIOPHARMACEUTICALS BIOTECHNOLOGY</i>	
<i>COMPANIES .....</i>	<i>113</i>
Radioactive Isotope Supply Industry.....	114
SMALL ANIMAL <i>IN-VIVO</i> IMAGING .....	114
<i>TABLE 57 SMALL ANIMAL IN-VIVO FUNCTIONAL IMAGING</i>	
<i>COMPETITORS.....</i>	<i>115</i>
CARDIAC IMAGING .....	116
<i>TABLE 58 CARDIAC IMAGING REAGENT COMPETITIVE SPACE.....</i>	<i>116</i>
FLUORESCENT PROTEINS .....	117
<i>TABLE 59 FLUORESCENT PROTEIN PRODUCERS.....</i>	<i>117</i>
ANTIBODY BIOTECHNOLOGY COMPANIES .....	118
<i>TABLE 60 ANTIBODY BIOTECHNOLOGY COMPANIES WHO HAVE</i>	
<i>INTEREST IN IMAGING REAGENTS.....</i>	<i>119</i>
CHAPTER SEVEN: BIOLOGIC IMAGING REAGENTS MARKETS.....	120
GROWTH DRIVING FORCES.....	120
<i>TABLE 61 BIOLOGIC IMAGING REAGENTS GROWTH DRIVING</i>	
<i>FORCES .....</i>	<i>120</i>
GROWTH DRIVING FORCES (CONTINUED) .....	121
INSTRUMENTS MARKETS.....	122
<i>TABLE 62 GLOBAL VALUE OF INSTRUMENTS AND ASSAYS</i>	
<i>UTILIZING BIOLOGIC IMAGING REAGENTS, THROUGH 2013</i>	
<i>(\$ MILLIONS).....</i>	<i>122</i>
<i>TABLE 62 (CONTINUED).....</i>	<i>123</i>
BIOLOGIC IMAGING REAGENTS MARKETS .....	124
MARKET OVERVIEW .....	124
<i>TABLE 63 GLOBAL VALUE OF BIOLOGIC IMAGING REAGENTS, BY</i>	
<i>TECHNOLOGY, THROUGH 2013 (\$ MILLIONS).....</i>	<i>124</i>
<i>TABLE 64 GLOBAL VALUE OF BIOLOGIC IMAGING REAGENTS</i>	
<i>MARKET, BY END USE, THROUGH 2013 (\$ MILLIONS).....</i>	<i>125</i>
<i>TABLE 65 GLOBAL VALUE OF BIOLOGIC REAGENTS MARKET, BY</i>	
<i>FUNCTION, THROUGH 2013 (\$ MILLIONS).....</i>	<i>126</i>
<i>TABLE 66 GLOBAL VALUE OF BIOLOGIC IMAGING REAGENTS, BY</i>	
<i>END USER MARKET, THROUGH 2013 (\$ MILLIONS).....</i>	<i>127</i>

<i>TABLE 67 GLOBAL VALUE OF BIOLOGIC REAGENTS MARKET, BY MODALITY, THROUGH 2013 (\$ MILLIONS)</i> .....	128
<i>FLUORESCENT PROTEINS</i> .....	129
<i>TABLE 68 GLOBAL VALUE OF FLUORESCENT PROTEIN REAGENTS, BY TYPE, THROUGH 2013 (\$ MILLIONS)</i> .....	129
<i>NANOPARTICLES</i> .....	130
<i>TABLE 69 GLOBAL VALUE OF IMAGING NANOPARTICLES BY TECHNOLOGY THROUGH 2013 (\$ MILLIONS)</i> .....	130
<i>CONTRAST REAGENTS</i> .....	131
<i>TABLE 70 GLOBAL VALUE OF CONTRAST AGENTS MARKET, BY MODALITY, THROUGH 2013 (\$ MILLIONS)</i> .....	131
<i>TABLE 71 GLOBAL VALUE OF MRI REAGENTS MARKET, BY TYPE, THROUGH 2013 (\$ MILLIONS)</i> .....	132
<i>TABLE 72 GLOBAL VALUE OF MRI GD CHELATE REAGENTS, BY PRODUCT, THROUGH 2013 (\$ MILLIONS)</i> .....	132
<i>TABLE 72 (CONTINUED)</i> .....	133
Contrast Reagents (Continued).....	134
Nephrogenic Systemic Fibrosis Impact on Gd-based Contrast Agents.....	135
<i>TABLE 73 GLOBAL VALUE OF MRI NON-GD CHELATE REAGENTS, BY PRODUCT, THROUGH 2013 (\$ MILLIONS)</i> .....	135
<i>TABLE 74 GLOBAL SALES OF MRI CONTRAST REAGENTS, BY PROCEDURE, THROUGH 2013 (\$ MILLIONS)</i> .....	136
<i>TABLE 75 GLOBAL VALUE OF ULTRASOUND REAGENTS MARKET, BY TYPE, THROUGH 2013 (\$ MILLIONS)</i> .....	137
<i>TABLE 76 GLOBAL VALUE OF X-RAY/CT REAGENTS MARKET, BY TYPE, THROUGH 2013 (\$ MILLIONS)</i> .....	138
<i>RADIOPHARMACEUTICALS</i> .....	139
<i>TABLE 77 GLOBAL VALUE OF RADIOPHARMACEUTICALS IMAGING REAGENTS MARKET, BY INDICATION, THROUGH 2013 (\$ MILLIONS)</i> .....	140
<i>TABLE 78 GLOBAL VALUE OF ONCOLOGY RADIOPHARMACEUTICALS IMAGING REAGENTS MARKET, BY INDICATION, THROUGH 2013 (\$ MILLIONS)</i> .....	141
<i>TABLE 79 GLOBAL VALUE OF ONCOLOGY RADIOPHARMACEUTICALS IMAGING REAGENTS MARKET, BY PRODUCT, THROUGH 2013 (\$ MILLIONS)</i> .....	142
<i>TABLE 80 GLOBAL VALUE OF FDG RADIOPHARMACEUTICAL REAGENTS, BY DISEASE CLASS, THROUGH 2013 (\$ MILLIONS)</i> .....	143
<i>OPTICAL IMAGING REAGENTS</i> .....	143
<i>TABLE 81 GLOBAL VALUE OF OPTICAL FLUORESCENT IMAGING REAGENTS MARKET, BY APPLICATION, THROUGH 2013 (\$ MILLIONS)</i> .....	144

<i>TABLE 82 GLOBAL VALUE OF IN-VITRO RESEARCH AND DRUG DISCOVERY AND DEVELOPMENT OPTICAL FLUORESCENT IMAGING REAGENTS MARKET, BY ASSAY, THROUGH 2013 (\$ MILLIONS)</i> .....	145
<i>TABLE 83 GLOBAL VALUE OF GENOMICS IN-VITRO OPTICAL FLUORESCENT IMAGING REAGENTS MARKET, BY ASSAY TYPE, THROUGH 2013 (\$ MILLIONS)</i> .....	146
<i>TABLE 84 GLOBAL VALUE OF PROTEOMICS IN-VITRO OPTICAL FLUORESCENT IMAGING REAGENTS MARKET, BY ASSAY TYPE, THROUGH 2013 (\$ MILLIONS)</i> .....	147
<i>TABLE 85 GLOBAL VALUE OF CELLULAR ANALYSIS IN-VITRO OPTICAL FLUORESCENT IMAGING REAGENTS MARKET, BY ASSAY TYPE, THROUGH 2013 (\$ MILLIONS)</i> .....	147
<i>TABLE 86 GLOBAL VALUE OF OPTICAL FLUORESCENT IMAGING REAGENTS, BY END USE, THROUGH 2013 (\$ MILLIONS)</i> .....	148
<i>OPTICAL IMAGING REAGENTS (Continued)</i> .....	149
<i>TABLE 87 GLOBAL VALUE OF IN-VITRO DIAGNOSTIC FLUORESCENT OPTICAL IMAGING REAGENTS, BY MARKET SEGMENT, THROUGH 2013 (\$ MILLIONS)</i> .....	150
<i>TABLE 88 GLOBAL VALUE OF OPTICAL IMAGING REAGENTS, BY TYPE, THROUGH 2013 (\$ MILLIONS)</i> .....	150
GEOGRAPHICAL .....	151
<i>TABLE 89 GLOBAL VALUE OF BIOLOGIC IMAGING REAGENTS, BY GEOGRAPHY, THROUGH 2013 (\$ MILLIONS)</i> .....	151
Geographical (Continued) .....	152
 CHAPTER EIGHT: PATENT STATUS.....	153
IMAGING REAGENTS PATENTS BY SELECTED TECHNOLOGY .....	153
<i>TABLE 90 NUMBER OF PATENTS BY TECHNOLOGY</i> .....	153
FLUORESCENCE REAGENTS .....	154
<i>TABLE 91 FLUORESCENCE REAGENTS PATENT ASSIGNEES BY COMPANY (NUMBER OF PATENTS)</i> .....	154
FLUORESCENT PROTEINS .....	155
<i>TABLE 92 FLUORESCENT PROTEIN PATENT ASSIGNEES BY COMPANY (NUMBER OF PATENTS)</i> .....	155
DENDRIMERS .....	156
<i>TABLE 93 DENDRIMER PATENT ASSIGNEES BY COMPANY (NUMBER OF PATENTS)</i> .....	157
<i>TABLE 94 QUANTUM DOTS PATENT ASSIGNEES BY COMPANY (NUMBER OF PATENTS)</i> .....	158
PATENTS BY COMPANY .....	158
<i>FIGURE 8 PATENTS BY COMPANY FOR MARKET SEGMENTS</i> .....	159
LITIGATION STATUS .....	160
<i>TABLE 95 IP LITIGATION STATUS</i> .....	160

CHAPTER NINE: COMPANY PROFILES .....	161
ACUSPHERE, INC. ....	161
<i>TABLE 96 ACUSPHERE PRODUCT PIPELINE</i> .....	161
<i>TABLE 97 ACUSPHERE PATENT ESTATE</i> .....	162
<i>TABLE 97 (CONTINUED)</i> .....	163
ADVANCED RESEARCH TECHNOLOGIES INC. ....	163
AFFIBODY AB .....	164
AION DIAGNOSTICS .....	165
ALNIS BIOSCIENCES INC. ....	166
ALSERES PHARMACEUTICALS INC. ....	167
AMAG PHARMACEUTICALS .....	167
<i>TABLE 98 AMAG MOLECULAR IMAGING REAGENTS PIPELINE</i> .....	168
<i>TABLE 99 AMAG MRI IMAGING REAGENTS MARKETING</i>	
<i>ALLIANCES</i> .....	169
ANTICANCER INC.....	169
AVID RADIOPHARMACEUTICALS .....	170
<i>TABLE 100 AVID DIAGNOSTIC IMAGING PIPELINE</i> .....	171
BAYER SCHERING PHARMA AG .....	172
BBI INTERNATIONAL .....	173
BD BIOSCIENCES .....	173
BECKMAN COULTER, INC. ....	174
BIOFORCE NANOSCIENCES HOLDINGS, INC. ....	175
BIOMODA INC. ....	176
BIOPHAN TECHNOLOGIES, INC.....	176
BIOSEARCH TECHNOLOGIES, INC.....	177
BIOSCEPTRE.....	177
BIOTAGE AB .....	178
BRACCO DIAGNOSTICS INC.....	179
CALIPER LIFE SCIENCES, INC. ....	179
CAMBRIDGE ISOTOPE LABORATORIES, INC. ....	180
CAPSULATION NANOSCIENCES AG .....	180
CARDINAL HEALTH .....	181
CARESTREAM HEALTH, INC.....	182
CELLCYTE GENETICS .....	183
CHEMICELL GMBH .....	184
CHINA MEDICAL TECHNOLOGIES, INC. ....	184
COVIDIEN.....	185
DENDRITECH, INC. ....	186
DO-COOP TECHNOLOGIES .....	187
EBIOSCIENCE, INC. ....	187
EPIX PHARMACEUTICALS.....	188
EPIX Pharmaceuticals (Continued).....	189
EVIDENT TECHNOLOGIES .....	190
EVROGEN .....	190

FERROPHARM GMBH .....	191
FLUOROPHARMA .....	191
<i>TABLE 101 FLUOROPHARMA PET IMAGING REAGENT PIPELINE.....</i>	<i>192</i>
FLUOROTECHNICS PTY LTD. ....	192
Fluorotechnics Pty Ltd. (Continued) .....	193
GE HEALTHCARE .....	194
<i>TABLE 102 GE HEALTHCARE IMAGING REAGENTS PIPELINE.....</i>	<i>195</i>
GUERBET .....	195
IBA MOLECULAR.....	196
IMMUNICON .....	196
INDEC BIOSYSTEMS.....	197
INVITROGEN .....	197
Invitrogen (Continued) .....	198
JUBILANT ORGANOSYS LTD.....	199
<i>TABLE 103 JUBILANT ORGANOSYS MEDICAL IMAGING REAGENT</i>	
<i>PIPELINE .....</i>	<i>200</i>
Jubilant Organosys Ltd. (Continued) .....	201
KEREOS, INC. ....	202
<i>TABLE 104 KEREOS IMAGING REAGENTS PIPELINE.....</i>	<i>202</i>
<i>TABLE 105 KEREOS STRATEGIC ALLIANCES .....</i>	<i>203</i>
KPL, INC. ....	203
LANTHEUS MEDICAL IMAGING.....	204
<i>TABLE 106 LANTHEUS DIAGNOSTIC IMAGING PIPELINE.....</i>	<i>204</i>
LUNA NANOWORKS .....	205
MARINPHARM GMBH .....	206
MBL INTERNATIONAL .....	206
MOLECULAR INSIGHT PHARMACEUTICALS .....	206
MOLECULAR TARGETING TECHNOLOGIES, INC.....	207
<i>TABLE 107 MTTI IMAGING REAGENTS PIPELINE .....</i>	<i>208</i>
NANOCO TECHNOLOGIES LTD. ....	209
NANOPROBES, INC. ....	210
NANOSPECTRA BIOSCIENCES .....	210
NANOSPHERE, INC. ....	211
<i>TABLE 108 NANOSPHERE GOLD IMAGING REAGENTS PIPELINE.....</i>	<i>212</i>
OXONICA INC. ....	212
PHILIPS HEALTHCARE .....	213
PROMEGA CORPORATION.....	214
SELAH TECHNOLOGIES, LLC .....	215
SIEMENS AG .....	215
Siemens AG (Continued) .....	216
SIGNALOMICS GMBH .....	217
STARPHARMA HOLDINGS LTD.....	217
Starpharma Holdings Ltd. (Continued).....	218
TAKARA BIO INC. ....	219

THERMO FISHER SCIENTIFIC.....	220
TK SIGNAL .....	221
VISEN MEDICAL INC. ....	221
WILEX AG.....	222
<i>TABLE 109 WILEX PRODUCT PIPELINE .....</i>	<i>223</i>