

AI in Oncology Market by Player Type (Integrated Suite), Application (Drug Discovery, De Novo Drug Design, Diagnosis, Precision Medicine, Genomic), Technology (CNN, NLP), Cancer Type (Lung), End User (Hospitals, Pharma), & Region - Global Forecast to 2030

Market Report | 2024-12-20 | 581 pages | MarketsandMarkets

AVAILABLE LICENSES:

- Single User \$4950.00
- Multi User \$6650.00
- Corporate License \$8150.00
- Enterprise Site License \$10000.00

Report description:

The global AI in Oncology market is projected to reach USD 11.52 billion by 2030 from USD 2.45 billion in 2024, at a CAGR of 29.4% from 2024 to 2030. The market's growth is fuelled by the growing demand for cost-effective cancer treatments & solutions, streamlining of the drug discovery process, rapid digitization of healthcare records and patient data, the growing volume of cancer cases, and regulatory compliance requirements.

In March 2024, the journal published by the American Cancer Society stated the following key points:

- More than 80% of AI devices that are FDA-approved are used in cancer detection & diagnosis. These devices have applications in the following: pathology (19.7%), radiology (54.9), and radiation oncology (8.5%).
- AI aided in decreasing the workload of radiologists in breast cancer screening by 30% and in comparison to healthcare professionals, AI maintained more accuracy.
- AI combined with human evaluations improved cancer detection rates by 8% in various studies.
- Precision medicine tools powered by AI contributed to the 33% decline in cancer mortality rates over the past 32 years by enabling better diagnoses, tailored treatments, and optimized clinical decision-making.

However, integration with existing healthcare systems, data privacy, and security constraints pose a significant challenge within this market.

"Machine learning held the largest share in technology type in the AI in oncology market in 2023."

The AI in oncology market is segmented based on technology into machine learning, natural language processing (NLP), context-aware processing and computing, computer vision, and image analysis (including optical character recognition). The

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

machine learning segment held the largest market share in 2023. Further, the machine learning segment includes deep learning (including convolutional neural networks (CNN), recurrent neural networks (RNN), generative adversarial networks (GAN), graph neural networks (GNN), others), supervised learning, reinforcement learning, unsupervised learning, other machine learning technologies. Among these, deep learning is the largest segment owing to its capability to analyze and process vast and complex datasets including medical images with improved efficiency. Within deep learning technologies such as CNNs are effective for image-based cancer detection, while RNNs and GANs are used to improve the temporal pattern analysis and data synthesis. Moreover, deep learning's scalability, adaptability and precision in analyzing and identifying the subtle patterns in cancer helped in improving the diagnosis, risk predictions and treatment optimization.

"By player type, the integrated solution segment is the largest and is also expected to register the fastest growth over the forecast period."

By player type, the AI in oncology market is divided into niche/point solution providers (including platform & service), integrated suite/platform providers (including platform & service), technology providers (only software), and business process service providers. The integrated suite/platform providers segment accounts for the largest and is projected to be the fastest-growing segment over the forecast year. "By player type, the integrated solution segment is the largest and is also expected to register the fastest growth over the forecast period." The growth is attributed to the fact that these providers offer comprehensive end-to-end solutions to streamline workflows across all treatment sectors of cancer such as detection, diagnosis, monitoring, and treatment planning. Such platforms help to integrate technologies including NLP, computer vision, and machine learning resulting in better clinical decision-making and offering seamless data interoperability.

Moreover, integrated suite/platform helps in decreasing the need for multiple vendors as they are unified systems due to their scalability and flexibility which results in cost effective solution. This holistic approach drives adoption and fuels rapid growth.

"Asia Pacific is estimated to register the highest CAGR over the forecast period."

The AI in Oncology market is segmented mainly into North America, Europe, Asia Pacific, Latin America, and Middle East & Africa. The AI in oncology market in Asia Pacific is projected to register at the highest CAGR rate during the forecast period. The growth of this region is due to the development of healthcare infrastructure, and government initiatives to modernize and digitalize the healthcare industry particularly due to rising cancer cases, growth in minimally invasive cancer treatments, and to increase in the survival rate of cancer patients. Countries such as Japan, China, and India are focusing on developing cost-effective solutions in cancer care emphasizing the importance of AI-driven data management to handle sensitive patient information and ensure compliance with regulatory mandates for healthcare data standardization. Various key players and startups in the countries are promoting AI use in cancer such as Niramai, a Bangalore-based health tech startup, developed Thermalytix, an AI-driven breast cancer screening solution. The technology uses non-invasive, radiation-free thermal imaging and machine learning algorithms to detect breast cancer at an earlier stage compared to traditional methods. The solution is designed for all ages and ensures privacy, portability, and high accuracy. It is available in over 30 cities across 200+ hospitals in India and is expanding globally to different countries, thereby, transforming preventive cancer care.

Breakdown of supply-side primary interviews by company type, designation, and region:

- By Company Type: Tier 1 (40%), Tier 2 (35%), and Tier 3 (25%)
- By Designation: Directors (35%), Managers (40%), and Others (25%)
- By Region: North America (40%), Europe (30%), Asia Pacific (20%), Latin America (5%) and Middle East Africa (5%)

List of Companies Profiled in the Report

- o Certara USA. (US)
- o Siemens Healthineers (Germany)
- o GE Healthcare (US)
- o ConcertAI (US)
- o Medtronic (Ireland)
- o F. Hoffmann-La Roche Ltd (Switzerland)
- o Oracle(US)
- o NVIDIA Corporation(US)

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- o Koninklijke Philips N.V. (Netherlands)
- o PathAI, Inc. (US)
- o CureMetrix, Inc. (US)
- o Mindpeak GmbH (Germany)
- o Paige AI, Inc. (US)
- o Predictive Oncology (US)
- o Exscientia (UK)
- o Insilico Medicine (US)
- o Iktos (Paris)
- o Tempus (US)
- o Azra AI (US)
- o CureMatch, Inc. (US)
- o OncoLens (US)
- o Triomics (US)
- o Clinakos. (US)
- o Perthera, Inc (US)
- o Cellworks Group, Inc. (US)
- o biomy, Inc. (Japan)

Research Coverage

This research report categorizes the AI in oncology market by player type [niche/point solution providers (including platform & service), integrated suite/platform providers (including platform & service), technology providers (only software), and business process service providers], by application [drug discovery {target identification & validation, lead identification & optimization, de novo drug design}, drug development {preclinical testing, predictive modeling for human trials, clinical trial optimization, adaptive trial design & monitoring}, diagnosis & early detection {imaging & radiology (mammography, computed tomography, magnetic resonance imaging (MRI), nuclear imaging (PET & SPECT), X-ray imaging, ultrasound, others), digital pathology & histopathology, liquid biopsy & biomarker detection, genetic risk prediction}, treatment planning & personalization {personalized treatment planning (precision medicine & genomic analysis, radiomics and radiogenomics, predictive models for treatment response, treatment recommendation systems), radiation therapy, chemotherapy, immunotherapy, targeted therapy (combination & dose optimization, AI-guided drug delivery), surgical planning & assistance (preoperative imaging and 3D modeling, intraoperative guidance and robotics, postoperative analysis & recovery)}, patient engagement & remote monitoring {symptom management & virtual assistance, remote patient monitoring, patient education & empowerment}, post-treatment surveillance & survivorship care {recurrence monitoring, long-term outcome prediction, mental health & support systems}, data management & analytics, other applications, by cancer type (solid tumors [including breast cancer lung cancer, prostate cancer, colorectal cancer, brain tumors, and other tumors], hematologic malignancies (including leukemia, lymphoma, multiple myeloma, other hematologic malignancies), by technology [machine learning {deep learning (convolutional neural networks (CNN), recurrent neural networks (RNN), generative adversarial networks (GAN), graph neural networks (GNN), others), supervised learning, reinforcement learning, unsupervised learning, other machine learning technologies}, natural language processing (NLP), context-aware processing and computing, computer vision, image analysis (including optical character recognition)], by deployment [on-premises model, cloud-based model, and hybrid model], by end user [healthcare providers {hospitals & clinics, specialty centers, laboratories & diagnostic centers, others}, pharmaceutical & biotechnology companies, medical device/equipment companies, academic & research institutions, government & regulatory agencies, healthcare payers, and others}, and region. The scope of the report covers detailed information regarding the major factors, such as drivers, restraints, challenges, and opportunities, influencing the growth of the AI in oncology market. A thorough analysis of the key industry players has been done to provide insights into their business overview, offerings, and key strategies such as acquisitions, collaborations, partnerships, mergers, product/service launches & enhancements, and approvals in the AI in oncology market. Competitive analysis of upcoming startups in the AI in oncology market ecosystem is covered in this report.

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Reasons to Buy the Report

The report will help market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall AI in oncology market and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to better position their businesses and plan suitable go-to-market strategies. The report also helps stakeholders understand the market pulse and provides information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

- Analysis of key drivers (supportive regulations, growing necessity to reduce healthcare costs, reduction in costs and improved operational efficiency with AI in oncology platforms, rising demand for streamlined clinical trials, technological advancements in AI algorithms, rising cancer prevalence globally), restraints (ensuring data security is a major concern for both patients and users, elevated costs associated with adoption of AI, resistance to adoption), opportunities (focus on personalized treatment plans, collaborative efforts, AI-driven drug discovery), and challenges (limited availability of datasets, interoperability issues) influencing the growth of the AI in oncology market
- Solution Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the AI in oncology market
- Market Development: Comprehensive information about lucrative markets ? the report analyses the AI in oncology market across varied regions.
- Market Diversification: Exhaustive information about new solutions, untapped geographies, recent developments, and investments in the AI in oncology market
- Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players such as Siemens Healthineers (Germany), GE Healthcare (US), ConcertAI (US), Medtronic (Ireland), F. Hoffmann-La Roche Ltd (Switzerland), Oracle(US), NVIDIA Corporation(US), Koninklijke Philips N.V. (Netherlands), PathAI, Inc. (US), CureMetrix, Inc. (US), Mindpeak GmbH (Germany), Paige AI, Inc. (US), Predictive Oncology (US), Exscientia (UK), and Insilico Medicine (US), among others in AI in oncology market.

Table of Contents:

1□INTRODUCTION□	46
1.1□STUDY OBJECTIVES□	46
1.2□MARKET DEFINITION□	46
1.3□STUDY SCOPE□	47
1.3.1□MARKET SEGMENTATION AND GEOGRAPHIC SPREAD□	47
1.3.2□INCLUSIONS AND EXCLUSIONS□	48
1.3.3□YEARS CONSIDERED□	51
1.4□CURRENCY CONSIDERED□	51
1.5□STAKEHOLDERS□	52
2□RESEARCH METHODOLOGY□	53
2.1□RESEARCH DATA□	53
2.1.1□SECONDARY DATA□	54
2.1.1.1□Key data from secondary sources□	55
2.1.2□PRIMARY DATA□	55
2.1.2.1□Primary sources□	56
2.1.2.1.1□Key data from primary sources□	57
2.1.2.1.2□Key industry insights□	58
2.1.2.2□Breakdown of primary interviews□	58
2.2□MARKET ESTIMATION METHODOLOGY□	59
2.3□MARKET SIZE ESTIMATION□	60
2.4□MARKET BREAKDOWN AND DATA TRIANGULATION□	68

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

2.5	RESEARCH ASSUMPTIONS	69
2.5.1	MARKET SIZING ASSUMPTIONS	69
2.5.2	OVERALL STUDY ASSUMPTIONS	69
2.6	RISK ASSESSMENT	70
2.7	RESEARCH LIMITATIONS	70
2.7.1	METHODOLOGY-RELATED LIMITATIONS	70
2.7.2	SCOPE-RELATED LIMITATIONS	70
3	EXECUTIVE SUMMARY	71
4	PREMIUM INSIGHTS	76
4.1	ATTRACTIVE OPPORTUNITIES FOR PLAYERS AI IN ONCOLOGY MARKET	76
4.2	AI IN ONCOLOGY MARKET, BY REGION	77
4.3	NORTH AMERICA: AI IN ONCOLOGY MARKET, BY DEPLOYMENT MODEL AND COUNTRY	77
4.4	AI IN ONCOLOGY MARKET, BY COUNTRY	78
4.5	AI IN ONCOLOGY MARKET: DEVELOPED MARKETS VS. EMERGING MARKETS	78
5	MARKET OVERVIEW	79
5.1	INTRODUCTION	79
5.2	MARKET DYNAMICS	79
5.2.1	DRIVERS	80
5.2.1.1	Increasing incidence of cancer disease	80
5.2.1.2	Growing need for early detection and diagnosis	80
5.2.1.3	Advancements in precision cancer treatment	81
5.2.1.4	Support from regulatory authorities	81
5.2.1.5	Increasing investments and funding	82
5.2.2	RESTRAINTS	83
5.2.2.1	High initial costs	83
5.2.2.2	Data integrity and algorithm validation	83
5.2.2.3	Integration with existing systems	83
5.2.3	OPPORTUNITIES	84
5.2.3.1	Radiomics and imaging analysis	84
5.2.3.2	Clinical trial optimization	86
5.2.3.3	Personalized treatment plans	86
5.2.3.4	Integration of multi-omics data	87
5.2.4	CHALLENGES	87
5.2.4.1	Limited availability of datasets	87
5.2.4.2	Data privacy and security	88
5.3	ECOSYSTEM ANALYSIS	89
5.4	CASE STUDY ANALYSIS	91
5.4.1	SIEMENS HEALTHINEERS IMPLEMENTED SYNGO.VIA RT IMAGE SUITE POWERED BY NVIDIA GPU-BASED SHERLOCK AI SUPERCOMPUTER	91
5.4.2	AI IN ONCOLOGY FOR PERSONALIZED TREATMENT PLANNING	91
5.4.3	PERSONALIZED OUTREACH FOR ONCOLOGISTS WITH TAKEDA'S AI SOLUTION	92
5.5	VALUE CHAIN ANALYSIS	93
5.6	PORTER'S FIVE FORCES ANALYSIS	95
5.6.1	BARGAINING POWER OF SUPPLIERS	96
5.6.2	BARGAINING POWER OF BUYERS	96
5.6.3	THREAT OF SUBSTITUTES	96
5.6.4	THREAT OF NEW ENTRANTS	97

5.6.5	INTENSITY OF COMPETITIVE RIVALRY	97
5.7	REGULATORY LANDSCAPE	97
5.7.1	NORTH AMERICA	97
5.7.2	EUROPE	98
5.7.3	ASIA PACIFIC	99
5.7.4	MIDDLE EAST & AFRICA	100
5.7.5	LATIN AMERICA	100
5.7.6	REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS	100
5.8	PATENT ANALYSIS	103
5.8.1	PATENT PUBLICATION TRENDS FOR AI IN ONCOLOGY	103
5.8.2	JURISDICTION ANALYSIS	104
5.8.3	MAJOR PATENTS IN AI IN ONCOLOGY MARKET	105
5.9	TECHNOLOGY ANALYSIS	106
5.9.1	KEY TECHNOLOGIES	106
5.9.1.1	Machine learning	106
5.9.1.2	Natural language processing	106
5.9.1.3	Computer vision	106
5.9.2	COMPLEMENTARY TECHNOLOGIES	107
5.9.2.1	High-performance computing	107
5.9.2.2	Next-generation sequencing	107
5.9.2.3	Digital twins	107
5.9.2.4	Real-world evidence/real-world data	107
5.9.3	ADJACENT TECHNOLOGIES	107
5.9.3.1	Cloud computing	107
5.9.3.2	Theranostics	108
5.9.3.3	Augmented and virtual reality	108
5.10	INDUSTRY TRENDS	108
5.10.1	SHIFT TOWARD PERSONALIZED ONCOLOGY	108
5.10.2	EXPANSION OF AI-BASED CLINICAL TRIALS	108
5.11	PRICING ANALYSIS	109
5.11.1	INDICATIVE PRICING OF AI IN ONCOLOGY SOFTWARE, BY DEPLOYMENT MODEL	109
5.11.2	AVERAGE SELLING PRICE OF AI IN ONCOLOGY PLATFORMS, BY REGION (2023)	109
5.12	KEY CONFERENCES AND EVENTS, 2025	110
5.13	KEY STAKEHOLDERS AND BUYING CRITERIA	111
5.13.1	KEY STAKEHOLDERS	111
5.13.2	BUYING CRITERIA	112
5.14	TRENDS AND DISRUPTIONS IMPACTING CUSTOMER BUSINESS	113
5.15	END USER ANALYSIS	113
5.15.1	UNMET NEEDS	113
5.15.2	END USER EXPECTATIONS	114
5.16	INVESTMENT AND FUNDING SCENARIO	114
5.17	IMPACT OF GENERATIVE AI ON AI IN ONCOLOGY MARKET	115
5.17.1	KEY USE CASES	116
5.17.2	CASE STUDIES OF GENERATIVE AI IMPLEMENTATION	116
5.17.2.1	Case Study 1: Accelerated drug discovery with Generative AI and streamlined workflows	116

?

5.17.3 IMPACT OF GENERATIVE AI ON INTERCONNECTED AND ADJACENT ECOSYSTEMS 117

5.17.3.1 Pharmaceutical research and development market 117

5.17.3.2 Radiology and medical imaging market 117

5.17.3.3 Healthcare delivery systems market 118

5.17.4 USER READINESS AND IMPACT ASSESSMENT 118

5.17.4.1 User readiness 118

5.17.4.1.1 Use A: Healthcare providers 118

5.17.4.1.2 User B: Pharmaceutical & biotechnology companies 118

5.17.4.2 Impact assessment 118

5.17.4.2.1 User A: Healthcare providers 118

5.17.4.2.2 User B: Pharmaceutical & biotechnology companies 119

6 AI IN ONCOLOGY MARKET, BY TECHNOLOGY 120

6.1 INTRODUCTION 121

6.2 MACHINE LEARNING 121

6.2.1 DEEP LEARNING 124

6.2.1.1 Need to streamline clinical workflows, reduce delays, and improve patient outcomes to drive market 124

6.2.1.2 Convolutional neural networks 125

6.2.1.3 Recurrent neural networks 126

6.2.1.4 Generative adversarial networks 126

6.2.1.5 Graph neural networks 126

6.2.1.6 Others 126

6.2.2 SUPERVISED LEARNING 127

6.2.2.1 Surge in demand for accurate predictions and tailored treatments to drive market 127

6.2.3 REINFORCEMENT LEARNING 128

6.2.3.1 Extensive use in drug discovery to drive market 128

6.2.4 UNSUPERVISED LEARNING 129

6.2.4.1 Ability to perform complex tasks and uncover potential drug candidates to drive market 129

6.2.5 OTHER MACHINE LEARNING TECHNOLOGIES 130

6.3 NATURAL LANGUAGE PROCESSING 131

6.3.1 EMERGING DEVELOPMENTS IN ONCOLOGY CARE TO DRIVE MARKET 131

6.4 CONTEXT-AWARE PROCESSING AND COMPUTING 132

6.4.1 ABILITY TO OPTIMIZE CLINICAL WORKFLOWS TO DRIVE MARKET 132

6.5 COMPUTER VISION 133

6.5.1 ELEVATED DEMAND FOR PRECISION MEDICINE TO DRIVE MARKET 133

6.6 IMAGE ANALYSIS 134

6.6.1 AUTOMATION OF COMPLEX IMAGING TASKS TO DRIVE MARKET 134

?

7 AI IN ONCOLOGY MARKET, BY APPLICATION 136

7.1 INTRODUCTION 137

7.2 DRUG DISCOVERY 138

7.2.1 TARGET IDENTIFICATION & VALIDATION 139

7.2.1.1 Emphasis on avoiding last-stage failure in drug discovery to boost growth 139

7.2.2 HIT IDENTIFICATION & PRIORITIZATION 141

7.2.2.1 Need for large-scale data analysis in HTS screening to drive adoption 141

7.2.3 HIT-TO-LEAD IDENTIFICATION/LEAD GENERATION 142

7.2.3.1 AI-driven lead generation to improve selectivity and binding mechanisms 142

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

7.2.4	LEAD OPTIMIZATION	143
7.2.4.1	Need to accelerate make-design-test cycles and high possibility of clinical drug failure to spur market	143
7.2.5	CANDIDATE SELECTION & VALIDATION	144
7.2.5.1	Candidate selection and validation to facilitate early drug discovery	144
7.3	DRUG DEVELOPMENT	145
7.3.1	PRECLINICAL TESTING	147
7.3.1.1	Need to identify risks and optimize candidates to boost growth	147
7.3.2	PREDICTIVE MODELING FOR HUMAN TRIALS	148
7.3.2.1	Need for leveraging AI for accurate dose selection and safety assessments to boost growth	148
7.3.3	CLINICAL TRIAL OPTIMIZATION	149
7.3.3.1	Need to enhance trial efficiency and outcomes with AI-driven insights to propel market	149
7.3.4	ADAPTIVE TRIAL DESIGN & MONITORING	150
7.3.4.1	AI-driven adaptive trial design & monitoring help improve flexibility and success rates	150
7.4	DIAGNOSIS & EARLY DETECTION	151
7.4.1	IMAGING & RADIOLOGY	152
7.4.1.1	Mammography	154
7.4.1.1.1	Need for accurate diagnosis of breast cancer to propel market	154
7.4.1.2	Computed tomography (CT)	154
7.4.1.2.1	Need for early diagnosis of solid tumors in lungs, liver, and brain to drive growth	154
7.4.1.3	Magnetic resonance imaging (MRI)	155
7.4.1.3.1	Need for optimizing imaging and enhancing tumor detection by integrating AI into MRI to propel demand	155
7.4.1.4	Nuclear imaging	156
7.4.1.4.1	Need for empowering AI-enhanced PET and SPECT imaging for precision oncology to drive growth	156
7.4.1.5	X-ray Imaging	157
7.4.1.5.1	Integrating AI-powered X-rays to automate detection of lung nodules to boost market	157
7.4.1.6	Ultrasound	158
7.4.1.6.1	Focus on integrating AI with ultrasound imaging to boost growth	158
7.4.1.7	Other imaging modalities	159
7.4.2	DIGITAL PATHOLOGY & HISTOPATHOLOGY	160
7.4.2.1	Focus on examining tissue samples to diagnose diseases to boost market	160
7.4.3	LIQUID BIOPSY & BIOMARKER DETECTION	161
7.4.3.1	Advancements in non-invasive diagnostic technologies to propel growth	161
7.4.4	GENETIC RISK PREDICTION	162
7.4.4.1	Increased awareness of people regarding hereditary cancer risk to encourage growth	162
7.5	TREATMENT PLANNING & PERSONALIZATION	163
7.5.1	PERSONALIZED TREATMENT PLANNING	164
7.5.1.1	Precision medicine & genomic analysis	166
7.5.1.1.1	Need for adopting personalized therapies to improve treatment response to boost growth	166
7.5.1.2	Radiomics & radiogenomics	167
7.5.1.2.1	Emphasis on optimizing radiomics and radiogenomics for disease characterization to propel demand	167
7.5.1.3	Predictive models for treatment response	168
7.5.1.3.1	Adoption of predictive modeling to analyze genetic information to improve growth	168
7.5.1.4	Treatment recommendation systems	168
7.5.1.4.1	Need for enhancing treatment decisions with data-driven insights to propel growth	168
7.5.2	RADIATION THERAPY	169
7.5.2.1	Need for effective tumor targeting to boost growth	169
7.5.3	CHEMOTHERAPY	170

7.5.3.1	Focus on optimizing chemotherapy for targeted treatment and risk prediction to boost segmental growth	170
7.5.4	IMMUNOTHERAPY	171
7.5.4.1	Use of immunotherapy for personalized and effective cancer care to boost growth	171
7.5.5	TARGETED THERAPY	172
7.5.5.1	Combination & dose optimization	173
7.5.5.1.1	Need for enhancing personalized dosing to augment segment growth	173
7.5.5.2	AI-guided drug delivery	174
7.5.5.2.1	Emphasis on achieving robust AI-powered drug delivery system to drive market	174
7.5.6	SURGICAL PLANNING & ASSISTANCE	175
7.5.6.1	Preoperative imaging & 3D modeling	176
7.5.6.1.1	AI-driven 3D models for enhanced oncology care	176
?		
7.5.6.2	Intraoperative guidance and robotics	177
7.5.6.2.1	Focus on integrating robotic surgery to enhance precision in treatment to drive market	177
7.5.6.3	Postoperative analysis & recovery	178
7.5.6.3.1	Emphasis on enhancing AI in postoperative care to drive demand	178
7.6	PATIENT ENGAGEMENT & REMOTE MONITORING	179
7.6.1	SYMPTOM MANAGEMENT & VIRTUAL ASSISTANCE	180
7.6.1.1	Symptom management & virtual assistance tools are beneficial for chronic disease management	180
7.6.2	REMOTE PATIENT MONITORING	181
7.6.2.1	Need for AI-enhanced, real-time monitoring to augment growth	181
7.6.3	PATIENT EDUCATION & EMPOWERMENT	182
7.6.3.1	Improved health literacy and engagement with AI-curated insights	182
7.7	POST-TREATMENT SURVEILLANCE & SURVIVORSHIP CARE	183
7.7.1	RECURRENCE MONITORING	184
7.7.1.1	Need to improve cancer surveillance and accurate recurrence detection and prognosis to drive market	184
7.7.2	LONG-TERM OUTCOME PREDICTION	186
7.7.2.1	Need for personalized care plans and chronic side-effect management to augment market	186
7.7.3	MENTAL HEALTH & SUPPORT SYSTEMS	187
7.7.3.1	Prioritizing mental health support in cancer care to augment segmental growth	187
7.8	DATA MANAGEMENT & ANALYTICS	188
7.8.1	INTEGRATION OF GENOMIC AND CLINICAL DATA TO ACCELERATE DEMAND FOR AI-POWERED ANALYTICS	188
7.9	OTHER APPLICATIONS	189
8	AI IN ONCOLOGY MARKET, BY CANCER TYPE	190
8.1	INTRODUCTION	191
8.2	SOLID TUMORS	191
8.2.1	RIISING PREVALENCE OF SOLID TUMORS TO BOOST NEED FOR AI-DRIVEN INNOVATIONS	191
8.2.2	BREAST CANCER	193
8.2.3	LUNG CANCER	194
8.2.4	PROSTATE CANCER	195
8.2.5	COLORECTAL CANCER	196
8.2.6	BRAIN TUMOR	197
8.2.7	OTHER SOLID TUMORS	198
8.3	HEMATOLOGIC MALIGNANCIES	199
8.3.1	RIISING CASES OF BLOOD CANCER TO DRIVE MARKET	199
8.3.2	LEUKEMIA	201
8.3.3	LYMPHOMA	202

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

8.3.4	MULTIPLE MYELOMA	203
8.3.5	OTHER HEMATOLOGIC MALIGNANCIES	204
8.4	OTHER CANCER TYPES	205
9	AI IN ONCOLOGY MARKET, BY END USER	206
9.1	INTRODUCTION	207
9.2	HEALTHCARE PROVIDERS	207
9.2.1	NEED FOR IMPROVED DIAGNOSTIC ACCURACY, PERSONALIZED TREATMENT PLANNING, AND ENHANCED WORKFLOW EFFICIENCY TO BOOST MARKET	207
9.2.2	HOSPITALS & CLINICS	209
9.2.3	SPECIALTY CENTERS	210
9.2.4	LABORATORIES & DIAGNOSTIC CENTERS	211
9.2.5	OTHER HEALTHCARE PROVIDERS	212
9.3	PHARMACEUTICAL & BIOTECHNOLOGY COMPANIES	213
9.3.1	NEED TO LEVERAGE AI FOR ACCELERATED ONCOLOGY DRUG DISCOVERY AND CLINICAL TRIALS TO BOOST GROWTH	213
9.4	MEDICAL DEVICE/ EQUIPMENT COMPANIES	214
9.5	ACADEMIC & RESEARCH INSTITUTIONS	216
9.6	GOVERNMENT & REGULATORY AGENCIES	217
9.7	HEALTHCARE PAYERS	218
9.8	OTHER END USERS	219
10	AI IN ONCOLOGY MARKET, BY PLAYER TYPE	221
10.1	INTRODUCTION	222
10.2	NICHE/POINT SOLUTION PROVIDERS	222
10.2.1	NICHE/POINT SOLUTION PROVIDERS ACCELERATE CANCER DRUG DISCOVERY AND DEVELOPMENT	222
10.3	INTEGRATED SUITE/PLATFORM PROVIDERS	224
10.3.1	INTEGRATED SUITE/PLATFORM PROVIDERS REDUCE NEED FOR MULTIPLE VENDORS AND ACCELERATE WORKFLOWS	224
10.4	TECHNOLOGY PROVIDERS	225
10.4.1	DEMAND FOR IMPROVED ONCOLOGY WORKFLOWS TO DRIVE MARKET	225
10.5	BUSINESS PROCESS SERVICE PROVIDERS	227
10.5.1	FOCUS ON OPTIMIZING NON-CLINICAL ONCOLOGY WORKFLOWS TO PROPEL MARKET GROWTH	227
11	AI IN ONCOLOGY MARKET, BY DEPLOYMENT MODEL	228
11.1	INTRODUCTION	229
11.2	CLOUD-BASED MODEL	229
11.2.1	NEED FOR ADVANCED CANCER RESEARCH AND TREATMENT TO BOOST USE OF CLOUD-BASED AI PLATFORMS	229
11.3	ON-PREMISES MODEL	231
11.3.1	NEED FOR ENHANCED DATA SECURITY AND COMPLIANCE TO PROPEL ADOPTION OF ON-PREMISES MODEL	231
11.4	HYBRID MODEL	232
11.4.1	NEED FOR ENHANCING SCALABILITY AND DATA SECURITY IN DIAGNOSTICS TO DRIVE USE OF HYBRID-BASED AI PLATFORMS	232
12	AI IN ONCOLOGY MARKET, BY REGION	234
12.1	INTRODUCTION	235
12.2	NORTH AMERICA	236
12.2.1	MACROECONOMIC OUTLOOK FOR NORTH AMERICA	239
12.2.2	US	249
12.2.2.1	Rising number of clinical trials and drug discovery to drive market	249
12.2.3	CANADA	260
12.2.3.1	Pharmaceutical giants advancing innovation and expanding access to clinical trials to fuel market	260
12.3	EUROPE	271

12.3.1	MACROECONOMIC OUTLOOK FOR EUROPE	272
12.3.2	GERMANY	283
12.3.2.1	Advanced healthcare system and collaborative efforts to boost market	283
12.3.3	UK	293
12.3.3.1	Government support for developing new AI platforms to drive innovation	293
12.3.4	FRANCE	304
12.3.4.1	Growing R&D pipeline for oncology trials to drive market	304
12.3.5	ITALY	314
12.3.5.1	Favorable regulatory scenarios to propel AI adoption in oncology	314
12.3.6	SPAIN	325
12.3.6.1	Established network of research centers to propel market	325
12.3.7	REST OF EUROPE	336
12.4	ASIA PACIFIC	346
12.4.1	MACROECONOMIC OUTLOOK FOR ASIA PACIFIC	347
12.4.2	CHINA	359
12.4.2.1	Increasing healthcare expenditure to drive demand for oncology solutions	359
12.4.3	INDIA	369
12.4.3.1	Growing cancer burden and healthcare disparities to fuel adoption of AI in oncology	369
12.4.4	JAPAN	380
12.4.4.1	Aging population and rising cancer rates to drive growth	380
12.4.5	REST OF ASIA PACIFIC	390
12.5	LATIN AMERICA	401
12.5.1	MACROECONOMIC OUTLOOK FOR LATIN AMERICA	402
12.5.2	BRAZIL	412
12.5.2.1	Rising cases of breast cancer to support market growth	412
?		
12.5.3	MEXICO	422
12.5.3.1	Use of AI in pediatric cancer treatment and chemotherapy complications to fuel market growth	422
12.5.4	REST OF LATIN AMERICA	432
12.6	MIDDLE EAST & AFRICA	443
12.6.1	MACROECONOMIC OUTLOOK FOR MIDDLE EAST & AFRICA	444
12.6.2	GCC COUNTRIES	454
12.6.2.1	Growing cancer cases and increasing clinical trials to drive growth	454
12.6.3	REST OF MIDDLE EAST & AFRICA	465
13	COMPETITIVE LANDSCAPE	476
13.1	INTRODUCTION	476
13.2	KEY PLAYER STRATEGIES/RIGHT TO WIN	476
13.2.1	OVERVIEW OF STRATEGIES ADOPTED BY KEY PLAYERS	477
13.3	REVENUE ANALYSIS OF KEY PLAYERS	478
13.4	MARKET SHARE ANALYSIS	479
13.5	COMPANY EVALUATION MATRIX: KEY PLAYERS, 2023	481
13.5.1	STARS	481
13.5.2	EMERGING LEADERS	481
13.5.3	PERVASIVE PLAYERS	481
13.5.4	PARTICIPANTS	481
13.5.5	COMPANY FOOTPRINT: KEY PLAYERS, 2023	483
13.6	COMPANY EVALUATION MATRIX: STARTUPS/SMES, 2023	488

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

13.6.1	PROGRESSIVE COMPANIES	488
13.6.2	RESPONSIVE COMPANIES	488
13.6.3	DYNAMIC COMPANIES	488
13.6.4	STARTING BLOCKS	488
13.6.5	COMPETITIVE BENCHMARKING: STARTUPS/SMES, 2023	490
13.7	COMPANY VALUATION AND FINANCIAL METRICS	492
13.8	BRAND/SOFTWARE COMPARISON	493
13.9	COMPETITIVE SCENARIO	493
13.9.1	PRODUCT LAUNCHES & ENHANCEMENTS	493
13.9.2	DEALS	494
13.9.3	EXPANSIONS	495
13.9.4	OTHER DEVELOPMENTS	495
14	COMPANY PROFILES	496
14.1	KEY PLAYERS	496
14.1.1	NVIDIA CORPORATION	496
14.1.1.1	Business overview	496
14.1.1.2	Products/Solutions offered	497
?		
14.1.1.3	Recent developments	498
14.1.1.3.1	Deals	498
14.1.1.4	MnM view	498
14.1.1.4.1	Right to win	498
14.1.1.4.2	Strategic choices	499
14.1.1.4.3	Weaknesses and competitive threats	499
14.1.2	GE HEALTHCARE	500
14.1.2.1	Business overview	500
14.1.2.2	Products/Solutions offered	501
14.1.2.3	Recent developments	502
14.1.2.3.1	Product launches & approvals	502
14.1.2.3.2	Deals	502
14.1.2.4	MnM view	503
14.1.2.4.1	Right to win	503
14.1.2.4.2	Strategic choices	503
14.1.2.4.3	Weaknesses and competitive threats	503
14.1.3	SIEMENS HEALTHINEERS AG	504
14.1.3.1	Business overview	504
14.1.3.2	Products/Solutions offered	505
14.1.3.3	Recent developments	506
14.1.3.3.1	Product launches & approvals	506
14.1.3.3.2	Deals	506
14.1.3.3.3	Expansions	506
14.1.3.4	MnM view	507
14.1.3.4.1	Right to win	507
14.1.3.4.2	Strategic choices	507
14.1.3.4.3	Weaknesses and competitive threats	507
14.1.4	F. HOFFMANN-LA ROCHE LTD	508
14.1.4.1	Business overview	508

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 14.1.4.2□Products/Solutions offered□509
- 14.1.4.3□Recent developments□510
- 14.1.4.3.1□Product launches & approvals□510
- 14.1.4.3.2□Deals□510
- 14.1.4.4□MnM view□511
- 14.1.4.4.1□Right to win□511
- 14.1.4.4.2□Strategic choices□511
- 14.1.4.4.3□Weaknesses and competitive threats□511
- 14.1.5□INSILICO MEDICINE□512
- 14.1.5.1□Business overview□512
- 14.1.5.2□Products/Solutions offered□512
- 14.1.5.3□Recent developments□513
- ?
- 14.1.5.4□MnM view□520
- 14.1.5.4.1□Right to win□520
- 14.1.5.4.2□Strategic choices□520
- 14.1.5.4.3□Weaknesses and competitive threats□520
- 14.1.6□CONCERTAI□521
- 14.1.6.1□Business overview□521
- 14.1.6.2□Products/Solutions offered□521
- 14.1.6.3□Recent developments□522
- 14.1.6.3.1□Product launches & approvals□522
- 14.1.6.3.2□Deals□522
- 14.1.7□MEDTRONIC□523
- 14.1.7.1□Business overview□523
- 14.1.7.2□Products/Solutions offered□524
- 14.1.7.3□Recent developments□525
- 14.1.7.3.1□Product launches & approvals□525
- 14.1.7.3.2□Deals□525
- 14.1.8□ORACLE□526
- 14.1.8.1□Business overview□526
- 14.1.8.2□Products/Solutions offered□527
- 14.1.8.3□Recent developments□528
- 14.1.8.3.1□Product launches & approvals□528
- 14.1.8.3.2□Deals□528
- 14.1.9□KONINKLIJKE PHILIPS N.V.□529
- 14.1.9.1□Business overview□529
- 14.1.9.2□Products/Solutions offered□530
- 14.1.9.3□Recent developments□531
- 14.1.9.3.1□Deals□531
- 14.1.10□PREDICTIVE ONCOLOGY□532
- 14.1.10.1□Business overview□532
- 14.1.10.2□Products/Solutions offered□533
- 14.1.10.3□Recent developments□533
- 14.1.10.3.1□Product launches & approvals□533
- 14.1.10.3.2□Deals□533
- 14.1.11□EXSCIENTIA□534

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 14.1.11.1 Business overview 534
- 14.1.11.2 Products/Solutions offered 535
- 14.1.11.3 Recent developments 536
 - 14.1.11.3.1 Product launches & approvals 536
 - 14.1.11.3.2 Deals 536
 - 14.1.11.3.3 Expansions 541
 - 14.1.11.3.4 Other developments 542
- ?
- 14.1.12 PATHAI, INC. 543
 - 14.1.12.1 Business overview 543
 - 14.1.12.2 Products/Solutions offered 543
 - 14.1.12.3 Recent developments 544
 - 14.1.12.3.1 Product launches & approvals 544
 - 14.1.12.3.2 Deals 544
- 14.1.13 CUREMETRIX, INC. 545
 - 14.1.13.1 Business overview 545
 - 14.1.13.2 Products/Solutions offered 545
 - 14.1.13.3 Recent developments 545
 - 14.1.13.3.1 Other developments 545
- 14.1.14 MINDPEAK GMBH 546
 - 14.1.14.1 Business overview 546
 - 14.1.14.2 Products/Solutions offered 546
 - 14.1.14.3 Recent developments 547
 - 14.1.14.3.1 Product launches & approvals 547
 - 14.1.14.3.2 Deals 547
 - 14.1.14.3.3 Other developments 547
- 14.1.15 PAIGE AI, INC. 548
 - 14.1.15.1 Business overview 548
 - 14.1.15.2 Products/Solutions offered 548
 - 14.1.15.3 Recent developments 549
 - 14.1.15.3.1 Product launches & approvals 549
 - 14.1.15.3.2 Deals 549
 - 14.1.15.3.3 Other developments 550
- 14.1.16 TEMPUS AI, INC. 551
 - 14.1.16.1 Business overview 551
 - 14.1.16.2 Products/Solutions offered 551
 - 14.1.16.3 Recent developments 552
 - 14.1.16.3.1 Product launches & approvals 552
 - 14.1.16.3.2 Deals 553
 - 14.1.16.3.3 Expansions 555
 - 14.1.16.3.4 Other developments 556
- 14.1.17 IKTOS 557
 - 14.1.17.1 Business overview 557
 - 14.1.17.2 Products/Solutions offered 557
 - 14.1.17.3 Recent developments 558
 - 14.1.17.3.1 Deals 558
 - 14.1.17.3.2 Other developments 561

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

?

14.2	OTHER PLAYERS	562
14.2.1	AZRA AI	562
14.2.2	CUREMATCH, INC.	563
14.2.3	ONCOLENS	563
14.2.4	TRIOMICS	564
14.2.5	CLINAKOS	565
14.2.6	PERTHERA, INC.	566
14.2.7	CELLWORKS GROUP, INC.	566
14.2.8	BIOMY, INC.	567
15	APPENDIX	568
15.1	DISCUSSION GUIDE	568
15.2	KNOWLEDGESTORE: MARKETSANDMARKETS? SUBSCRIPTION PORTAL	577
15.3	CUSTOMIZATION OPTIONS	579
15.4	RELATED REPORTS	579
15.5	AUTHOR DETAILS	580

AI in Oncology Market by Player Type (Integrated Suite), Application (Drug Discovery, De Novo Drug Design, Diagnosis, Precision Medicine, Genomic), Technology (CNN, NLP), Cancer Type (Lung), End User (Hospitals, Pharma), & Region - Global Forecast to 2030

Market Report | 2024-12-20 | 581 pages | MarketsandMarkets

To place an Order with Scotts International:

- ☐ - Print this form
- ☐ - Complete the relevant blank fields and sign
- ☐ - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User	\$4950.00
	Multi User	\$6650.00
	Corporate License	\$8150.00
	Enterprise Site License	\$10000.00
		VAT
		Total

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*	<input type="text"/>	Phone*	<input type="text"/>
First Name*	<input type="text"/>	Last Name*	<input type="text"/>
Job title*	<input type="text"/>		
Company Name*	<input type="text"/>	EU Vat / Tax ID / NIP number*	<input type="text"/>
Address*	<input type="text"/>	City*	<input type="text"/>

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Zip Code*

Country*

Date

Signature