Nanotechnology In Cancer Treatment Market Size, Share, Competitive Landscape and Trend Analysis Report

The Business Research Company's Nanotechnology In Cancer Treatment Global Market Report 2025 – Market Size, Trends, And Global Forecast 2025-2034

The Business Research Company

LONDON, GREATER LONDON, UNITED KINGDOM, September 12, 2025 /EINPresswire.com/ -- How Large Will The Nanotechnology In Cancer Treatment Market Be By 2025?

The market size for nanotechnology in cancer treatment has seen a swift expansion in recent years, increasing from $137.90 billion in 2024 to $159.09 billion in 2025. This represents a compound annual growth rate (CAGR) of 15.4%. Several factors have contributed to this historical growth, including a global increase in cancer prevalence, heightened awareness of early cancer detection, escalated investment in nanomedicine research and development, a growing preference for minimally invasive treatments, and greater government financial support for oncology nanotechnology research.

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The market size of nanotechnology application in cancer therapy is projected to significantly expand over the next several years, reaching a value of $278.07 billion by 2029 and indicating a compound annual growth rate (CAGR) of 15.0%. This predictive expansion during the forecast period is influenced by an increase in demands for targeted cancer treatments, continuous integration of nanotechnology in drug delivery systems, an escalating emphasis on personalized oncology treatment, an increased number of clinical trials experimenting with nanotech-based cancer drugs, and growing utilization of nanotheranostics in cancer care. Within the same forecast period, the market is anticipated to be shaped by advancements in nanoparticle drug delivery mechanisms, innovative breakthroughs in cancer-specific nanocarriers, the fusing of artificial intelligence with nanotechnology for precision oncology, the creation of multifunctional

nanodevices for diagnosis and treatment, and the broadening application of nanotheranostics in personalized medicine.

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What Are The Major Driving Forces Influencing The Nanotechnology In Cancer Treatment Market Landscape?
The surge in the desire for specialized treatments is predicted to boost the expansion of nanotechnology in the field of cancer therapy in the near future. Targeted therapies entail cancer treatments that specifically focus on molecular markers or pathways that contribute to tumor development and growth. The increasing demand for these therapies stems from their specialized ability to accurately target cancer cells, therefore reducing harm to healthy tissue and minimizing adverse effects. Nanotechnology improves targeted therapies in cancer treatment by allowing for the accurate delivery of medication directly to the cancer cells, enhancing efficacy and reducing the potential damage to healthy tissues. For example, in July 2023, the American Society of Gene & Cell Therapy (ASGCT), a professional membership organization based in the US, reported that at the close of Q1 2023, there were 247 gene therapies in Phase II. This figure saw a 5% hike, reaching 260 by the conclusion of Q2 2023. Consequently, the burgeoning demand for targeted therapies is fuelling the expansion of nanotechnology in the cancer treatment marketplace.

Who Are The Top Players In The Nanotechnology In Cancer Treatment Market?
Major players in the Nanotechnology In Cancer Treatment Global Market Report 2025 include:
• Pfizer Inc.
• AstraZeneca PLC
• Novartis AG
• Amgen Inc.
• GE Healthcare Technologies Inc.
• Eisai Co. Ltd.
• Jazz Pharmaceuticals plc
• Arrowhead Pharmaceuticals Inc.
• Nanobiotix S.A.
• EnGeneIC Ltd.

What Are The Key Trends And Market Opportunities In The Nanotechnology In Cancer Treatment Sector?
Major businesses in the nanotechnology in cancer treatment market are investing in the advancement of superior treatment methods like immunotherapy nano formulation, aiming to boost targeting of the immune system and reduce unwanted side effects in cancer patients. This type of nano formulation treatment uses nanotechnology for direct delivery of immune-based therapies to the intended targets, thereby improving the precision of the treatment. It enhances drug stability, bioavailability, and triggers the activation of the immune response. For example,

Cello Therapeutics, a biotech company based in the US, launched the extensive therapeutic cancer nano vaccine CE120 in December 2023, after obtaining approval from the Food and Drug Administration. The first clinical application of platelet membrane-coated nanoparticles for solid tumor treatment was signified by this therapy. CE120 merges targeted drug delivery with activating the immune system, with the purpose of eliminating tumors and averting their return. Its distinctive nanotechnology platform escalates both the precision of the therapy and the immune response. This achievement sets CE120 as a leading nanomedicine in the treatment of cancer.

Market Share And Forecast By Segment In The Global Nanotechnology In Cancer Treatment Market
The nanotechnology in cancer treatment market covered in this report is segmented

1) By Nanotechnology Type: Liposomes, Dendrimers, Nanoparticles
2) By Treatment Type: Chemotherapy, Immunotherapy, Targeted Therapy, Combined Therapy Approaches, Surgery Assistance
3) By Cancer Type: Breast Cancer, Lung Cancer, Prostate Cancer, Colorectal Cancer, Blood Cancer, Other Cancer Types
4) By Application: Targeted Drug Delivery, Photothermal Therapy, Radiation Therapy Enhancement, Diagnostics And Imaging, Gene Delivery Systems
5) By End-User: Hospitals, Research Institutions, Diagnostics Laboratories, Pharmaceutical Companies, Contract Research Organizations (CROs)

Subsegments:
1) By Liposomes: Conventional Liposomes, Stealth Liposomes, Cationic Liposomes, Immunoliposomes
2) By Dendrimers: Polyamidoamine Dendrimers, Polypropyleneimine Dendrimers, Peptide-Based Dendrimers, Carbosilane Dendrimers
3) By Nanoparticles: Gold Nanoparticles, Magnetic Nanoparticles, Polymeric Nanoparticles, Quantum Dots, Lipid Nanoparticles

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Nanotechnology In Cancer Treatment Market Regional Insights
In the 2025 Global Market Report on Nanotechnology In Cancer Treatment, North America emerged as the predominant region in 2024. Furthermore, Asia-Pacific is projected to experience the swiftest growth rate in the forecast period. This report incorporates regions such as Asia-Pacific, Western Europe, Eastern Europe, North America, South America, the Middle East, and Africa.

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