

Radiotheranostics Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Radioisotope (Technetium-99, Gallium-68, Iodine-131, Iodine-123, 18F, Y-90, Lutetium (Lu) 177, Copper (Cu) 67, Copper (Cu) 64, Others), By Application (Oncology v/s Non-Oncology), By End User (Hospitals & Clinics, Pharmaceutical & Biotechnology Companies, Others) By Region & Competition, 2021-2031F

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Abstracts

The Global Radiotheranostics Market is projected to expand significantly, growing from USD 11.15 Billion in 2025 to USD 33.98 Billion by 2031, representing a CAGR of 20.41%. Radiotheranostics represents a precision medical paradigm that employs paired radiopharmaceuticals to simultaneously diagnose and treat pathologies, primarily within the field of oncology. The market is largely driven by the rising global prevalence of cancer and a growing clinical preference for personalized therapeutic regimens that maximize efficacy while minimizing systemic toxicity. This dual approach enables clinicians to visualize the extent of disease and deliver targeted radiation to specific cellular sites, thereby encouraging widespread adoption across healthcare systems aimed at improving patient outcomes.

However, the sector encounters a substantial challenge regarding supply chain stability, particularly concerning the reliable availability of medical radioisotopes. The production of these essential materials relies heavily on a limited number of aging nuclear research reactors, leaving the market exposed to unscheduled outages and logistical disruptions. According to Nuclear Medicine Europe, unexpected reactor maintenance issues in late

2024 were projected to result in supply shortages of up to 40% for critical diagnostic isotope generators, underscoring the fragility of the global distribution network.

Market Driver

The rising global incidence of targetable cancers acts as the primary catalyst driving the radiotheranostics market. As the burden of oncological disease increases, healthcare providers are prioritizing theranostic modalities that combine diagnostic precision with therapeutic lethality to manage complex cases. This demand for personalized intervention is supported by the growing volume of diagnoses requiring advanced care; according to the American Cancer Society's "Cancer Facts & Figures 2024" report from January 2024, 2,001,140 new cancer cases were projected to occur in the United States in 2024. This intensifying disease burden has directly resulted in substantial commercial uptake for approved radioligand therapies, as evidenced by Novartis reporting in their October 2024 "Q3 2024 Interim Financial Report" that net sales for the therapy Pluvicto reached \$386 million for the quarter, reflecting the critical market need for these targeted treatments.

Concurrently, a surge in public-private investments and funding is transforming the sector's competitive landscape. Acknowledging the commercial viability of radiopharmaceuticals, major pharmaceutical entities are aggressively acquiring specialized biotech firms to secure proprietary platforms and manufacturing infrastructure. These capital infusions are essential for overcoming historical supply chain fragilities and accelerating the development of novel isotopes. For instance, Bristol Myers Squibb announced in a February 2024 press release that it had finalized the acquisition of RayzeBio for a total equity value of approximately \$4.1 billion. This level of financial commitment signals a definitive shift toward scaling global production capabilities to meet anticipated long-term demand.

Market Challenge

The Global Radiotheranostics Market contends with a critical impediment stemming from the fragility of its supply chain, specifically the inconsistent availability of essential medical radioisotopes. The industry relies on a shrinking number of aging nuclear research reactors to produce these isotopes, which form the foundation for paired diagnostic and therapeutic agents. Any unscheduled outage or maintenance delay at these facilities creates an immediate bottleneck, preventing the manufacturing of life-saving radiopharmaceuticals. This unreliability compels clinicians to postpone or cancel

time-sensitive cancer treatments, thereby eroding confidence in radiotheranostics as a sustainable pillar of oncology and discouraging healthcare institutions from investing in necessary infrastructure.

The impact of these logistical failures is acute and measurable. According to the Society of Nuclear Medicine and Molecular Imaging, unexpected reactor downtime in 2024 resulted in supply shortages ranging from 50% to 100% of normal requirements across various global regions. These severe disruptions directly limit market revenue and stall adoption rates, as pharmaceutical companies cannot guarantee product delivery to patients. Consequently, the volatility of the isotope supply remains the primary friction point hindering the sector's overall growth potential.

Market Trends

The Global Radiotheranostics Market is undergoing a significant technical evolution defined by the transition toward Targeted Alpha-Particle Therapies (TATs). Unlike prevailing beta-emitting isotopes such as Lutetium-177, alpha-emitters like Actinium-225 deliver high linear energy transfer radiation over a short range, inducing double-strand DNA breaks that are highly effective against micro-metastases while sparing surrounding healthy tissue. This shift in therapeutic modality has triggered substantial investment from major pharmaceutical entities seeking to secure proprietary actinium supply chains and pipelines. For example, AstraZeneca finalized the acquisition of Fusion Pharmaceuticals in June 2024 for a transaction value of approximately \$2.4 billion to integrate actinium-based radioconjugates into its oncology portfolio.

Simultaneously, the industry is observing the emergence of Radiopharmaceutical-Specialized CDMOs designed to mitigate historical manufacturing vulnerabilities. To address the logistical complexities associated with isotopes having ultra-short half-lives, these specialized Contract Development and Manufacturing Organizations are engineering purpose-built infrastructure capable of decentralized, just-in-time production, distinct from traditional centralized models. This structural expansion is crucial for ensuring commercial scalability and redundancy against reactor outages. As reported by Nucleus RadioPharma in a May 2024 press release, the organization announced the development of two new facilities totaling over 100,000 square feet to address nationwide supply chain constraints.

Key Market Players

TransCode Therapeutics, Inc

Curium SAS

GE Healthcare Inc

Bayer AG

Lantheus Medical Imaging, Inc

Novartis AG

Spectrum Pharmaceuticals, Inc

Ipsen S.A

Actinium Pharmaceuticals, Inc

Nordic Nanovector ASA

Y-mAbs Therapeutics, Inc

Report Scope

In this report, the Global Radiotheranostics Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Radiotheranostics Market, By Radioisotope

Technetium-99

Gallium-68

Iodine-131

Iodine-123

¹⁸F

Y-90

Lutetium (Lu) 177

Copper (Cu) 67

Copper (Cu) 64

Others

Radiotheranostics Market, By Application

Oncology v/s Non-Oncology

Radiotheranostics Market, By End User

Hospitals & Clinics

Pharmaceutical & Biotechnology Companies

Others

Radiotheranostics Market, By Region

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Radiotheranostics Market.

Available Customizations:

Global Radiotheranostics Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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