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India Monoclonal Antibodies Market By Type (Murine, Chimeric, Humanized, Human), By Application (Cancer, Cardiac/Cardiovascular, Neurological, Others), By Production (In vitro, In vivo), By Biomanufacturing (Originator, CMO), By End User (Hospitals, Research Laboratories, Others), By Region, Competition, Forecast and Opportunities, 2020-2030F

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Abstracts

India Monoclonal Antibodies Market was valued at USD 208.58 Million in 2024 and is expected to reach USD 287.94 Million by 2030 with a CAGR of 5.72% during the forecast period. Monoclonal antibodies (mAbs) are laboratory-engineered molecules that replicate the immune system's ability to combat harmful pathogens like bacteria, viruses, and other foreign substances. These molecules are specifically designed to target and bind to distinct antigens or proteins with high precision. mAbs are a key class of biopharmaceuticals used for a variety of medical purposes, including disease diagnosis and treatment. In India, the monoclonal antibodies market is witnessing significant expansion, fueled by advancements in biotechnology, growing healthcare demands, and an increased focus on treating chronic diseases and cancer. As the need for targeted therapies continues to rise, mAbs are gaining traction for their ability to provide highly specific and effective treatments for a range of medical conditions, including cancer, autoimmune disorders, and infectious diseases.

The rise of biosimilars developed by Indian pharmaceutical companies has made mAb treatments more affordable and accessible, presenting substantial opportunities for market growth. India is also becoming a key hub for clinical trials, with numerous global

pharmaceutical companies conducting monoclonal antibody studies, attracted by the country's large patient population and cost-effective advantages. Many Indian pharmaceutical companies are forming partnerships with international players to advance the development and distribution of monoclonal antibody products, which expands their portfolios and broadens access to global markets. Despite the affordability gains brought about by biosimilars, the overall cost of monoclonal antibody therapies remains high, which limits access for many patients. Additionally, stringent regulatory frameworks and market entry barriers can slow the approval and commercialization of new mAb treatments in India. The monoclonal antibodies market in India is well-positioned for strong growth, driven by the increasing demand for targeted therapies, advances in biotechnology, and government support for the biosimilars sector. However, overcoming challenges related to cost and regulatory hurdles will be crucial in ensuring broader access to these therapies. The market is set to benefit from the ongoing development of biosimilars, improved healthcare infrastructure, and a growing focus on precision medicine.

Key Market Drivers

Growing Prevalence of Chronic Diseases

The rising prevalence of chronic diseases in India is a key factor driving the growth of the monoclonal antibodies (mAb) market. Conditions such as cancer, cardiovascular diseases, autoimmune disorders, and diabetes are becoming increasingly common, largely due to changes in lifestyle, an aging population, and environmental factors. According to recent data from the Longitudinal Ageing Survey in India (LASI), 21% of the elderly population suffers from at least one chronic condition, with urban areas exhibiting a higher prevalence (29%) compared to rural areas (17%). Hypertension and diabetes are the most widespread, accounting for approximately 68% of chronic diseases among the elderly. Additionally, cardiovascular diseases impact 37% of individuals aged 75 and older, with bone/joint diseases and chronic lung diseases also emerging as significant health concerns. As these conditions affect a growing segment of the population, the demand for advanced treatments such as monoclonal antibodies are rising. mAbs are particularly effective for treating chronic diseases due to their ability to provide targeted therapies that address the root causes of these conditions with precision. This makes them especially valuable for managing complex, long-term illnesses like cancer and autoimmune disorders, which require continuous treatment and specialized care.

The increasing burden of chronic diseases has led to a greater emphasis on innovative

therapies, further driving the demand for monoclonal antibodies. As the need for more effective and specialized treatments intensifies, the market for mAbs is expected to expand, presenting significant opportunities for pharmaceutical companies to develop and bring new mAb-based therapies to the market.

Growing Demand for Targeted Therapies

The rising demand for targeted therapies is a key driver of the monoclonal antibodies (mAb) market in India. As the healthcare sector evolves toward precision medicine, there is a growing preference for treatments that directly address the root causes of diseases, rather than simply alleviating symptoms. Monoclonal antibodies, known for their ability to specifically target particular molecules or cells associated with various conditions, are leading this transformation. According to the Indian Council of Medical Research (ICMR), for every two women diagnosed with breast cancer, one woman dies from the disease in India. Additionally, approximately 2,500 individuals die each day from tobacco-related illnesses. Cancers of the oral cavity and lungs in men, and cervix and breast cancer in women, account for more than 50% of cancer-related deaths in India. Targeted therapies are particularly in demand for treating complex diseases such as cancer, autoimmune disorders, and chronic conditions. For example, mAbs can be engineered to bind to specific antigens on cancer cells, effectively targeting tumors with minimal damage to surrounding healthy tissue. This precision not only enhances the effectiveness of treatment but also minimizes side effects, making mAbs an appealing option for both patients and healthcare providers.

As both patients and medical professionals increasingly seek treatments with better outcomes and fewer side effects, the demand for monoclonal antibodies continues to grow. This shift toward precision and personalized medicine further propels the expansion of the market, prompting pharmaceutical companies to focus on developing and commercializing new mAb-based therapies for a wide range of diseases.

Key Market Challenges

Quality Assurance and Manufacturing

The production of mAbs involves complex biotechnological processes, including cell culture, purification, and formulation. Ensuring consistency and quality throughout these processes is challenging. Setting up and maintaining facilities for mAb manufacturing requires substantial investments in infrastructure, equipment, and skilled personnel. Ensuring compliance with Good Manufacturing Practices (GMP) standards is essential.

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The mAb manufacturing process is subject to strict regulatory oversight to guarantee product safety and efficacy. Compliance with evolving regulatory requirements can be demanding and resource intensive. Managing the supply chain for critical raw materials and reagents needed for mAb production is a challenge, particularly during disruptions such as the COVID-19 pandemic. Skilled professionals in bioprocessing, quality control, and regulatory affairs are needed for successful mAb manufacturing. A shortage of trained personnel can be a challenge. Maintaining sterility and preventing contamination in bioreactors and downstream processing is critical. Even minor contamination incidents can result in production losses and quality issues. Transitioning from laboratory-scale production to commercial-scale manufacturing presents challenges in terms of process scalability, efficiency, and consistency.

Cost and Affordability

The development and manufacturing of mAbs involve complex and resource-intensive processes, contributing to high production costs. This cost burden can be passed on to patients, making mAb therapies expensive. Patients, healthcare providers, and healthcare systems in India are often price sensitive. The high cost of mAbs may limit their adoption, especially in a healthcare market where affordability is a critical factor. Health insurance coverage for mAbs may be limited, which means that many patients must pay for these treatments out of pocket. Affordability can be a major concern in such cases.

Even if patients have health insurance, copayments, deductibles, and other out-of-pocket expenses for mAbs can be substantial. High costs can discourage patients from pursuing these therapies. The high cost of mAbs can create disparities in healthcare access, making it difficult for marginalized or poor populations to benefit from these therapies. High costs can limit market penetration, which affects the adoption of mAbs. A smaller patient pool can impact the commercial success of these therapies. The affordability of mAbs can impact patient compliance. Patients who cannot afford these treatments may not adhere to their prescribed regimens, leading to suboptimal outcomes. In rural areas with limited healthcare infrastructure, affordability issues may exacerbate disparities in access to mAb therapies.

Key Market Trends

Rising Focus on Biosimilars

Biosimilars are biologic products that closely resemble an already approved reference

product, typically offered at a lower cost than the original branded versions. This trend is particularly significant in India, where the ability to produce high-quality, affordable biosimilars is expanding access to treatments, particularly for low- and middle-income populations. A study commissioned by the Department of Pharmaceuticals has projected that by 2030, patents for 24 major drugs, including globally recognized products such as Humira (adalimumab), Keytruda (pembrolizumab), Opdivo (nivolumab), Ibrance (palbociclib), and Symbicort (budesonide), will expire, unlocking a market worth over USD 250 billion. As more than 20 drugs, collectively valued at USD 250 billion in annual sales, are poised to go off-patent, Indian companies are expected to step in with generic and biosimilar alternatives.

India's regulatory framework has become more conducive to biosimilar development, with the Central Drugs Standard Control Organisation (CDSCO) streamlining approval processes. Government support for biosimilar research and development has significantly contributed to the rapid expansion of this market segment. Initially, biosimilars in India were focused on oncology and immunology, but their application is increasingly expanding to other therapeutic areas, including rheumatology, diabetes, and dermatology. This broader range of uses is further fueling demand. For instance, in March 2024, Aurobindo Pharma Ltd announced that its wholly owned subsidiary, CuraTeQ Biologics Pvt Ltd, demonstrated positive Phase-1 trial results for its Omalizumab biosimilar (BP11), comparing favorably to the reference product Xolair sourced from the US and EU. Omalizumab is a monoclonal antibody used to treat asthma and hives.

India's leadership in biosimilar production is not just catering to domestic demand but also positioning the country as a major player in international markets, including Europe, the U.S., and emerging markets, opening up significant growth opportunities. As the adoption of biosimilars continues to rise, their affordability, accessibility, and effectiveness will be crucial factors in shaping the future of the mAb market in India, making them a central element in market growth and innovation.

Segmental Insights

Type Insights

Based on Type, the Human emerged as the fastest growing segment in the Indian market for Monoclonal Antibodies during the forecast period. Fully human monoclonal antibodies (mAbs) are engineered to target specific molecules or cells involved in disease processes with a high degree of precision. This targeted approach enables

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more effective treatments, especially for complex conditions like cancer, autoimmune disorders, and infectious diseases. By focusing exclusively on the relevant disease-causing factors, human mAbs deliver superior therapeutic outcomes compared to other types, such as murine or chimeric mAbs. Since human mAbs are derived entirely from human sources, they are less likely to trigger immune reactions, making them safer and better tolerated by patients, which enhances their appeal in clinical settings.

Advances in biotechnology, including the use of transgenic mice and phage display techniques, have facilitated the development of high-quality fully human antibodies, increasing their availability and cost-effectiveness. These innovations are contributing to the rapid expansion of the human mAb market. Regulatory agencies, such as the U.S. FDA and the EMA, are increasingly favorable towards fully human mAbs, offering faster approval processes due to their lower immunogenicity and superior safety profile. This regulatory confidence is fostering further investment and development in human mAbs. As the healthcare sector moves towards personalized medicine, human mAbs are becoming central to this shift, offering highly targeted therapies tailored to an individual's genetic profile or specific disease mechanisms. This aligns with the growing demand for treatments that are more precise, effective, and have fewer side effects. While initially used primarily in oncology, the applications of human mAbs are now expanding into areas like autoimmune disorders, infections, and neurological conditions. This broadening of therapeutic uses is significantly increasing their market potential and growth opportunities.

Application Insights

Based on Application, Cancer emerged as the dominating segment in the Indian market for Monoclonal Antibodies in 2024. India has experienced an increase in cancer diagnoses, with a growing number of cases each year. Common types of cancer, including breast cancer, lung cancer, colorectal cancer, and head and neck cancers, are becoming more widespread, driving demand for advanced treatments like monoclonal antibodies. Breast cancer is the most prevalent cancer among women in India, representing 28.2% of all female cancers, with approximately 216,108 new cases estimated in 2022. Monoclonal antibodies have proven highly effective in cancer treatment, particularly by modulating the immune system and targeting tumor cells. These therapies have become a standard approach for various cancers, offering better survival rates and quality of life compared to traditional treatments like chemotherapy and radiation. Both international and Indian pharmaceutical companies are making significant investments in the development of mAb-based cancer therapies. The emphasis on innovative, targeted cancer treatments is driving growth in the oncology

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sector. As India’s healthcare infrastructure improves, and the cost of monoclonal antibodies decreases partly due to the rise of biosimilars—oncology continues to be the largest and fastest-growing therapeutic area for mAb treatments.

Regional Insights

Based on Region, South India emerged as the dominant region in the Indian market for Monoclonal Antibodies in 2024. The Southern states of Tamil Nadu, Karnataka, Andhra Pradesh, and Kerala are recognized for their advanced healthcare infrastructure, including specialized cancer centers, hospitals, and research facilities. This well-established infrastructure makes the region an ideal hub for the administration and expansion of monoclonal antibody therapies. Cities like Hyderabad, often called 'Genome Valley,'and Bengaluru are home to numerous pharmaceutical and biotech companies, known for their strong R&D capabilities in monoclonal antibody development and production. The presence of major players in the pharmaceutical and biosimilar industries has bolstered the South's leadership in the mAb market. Furthermore, the South leads in the number of clinical trials related to monoclonal antibodies, with its healthcare institutions equipped to handle emerging treatments, fostering both research activity and adoption of new therapies. The region also benefits from extensive government initiatives aimed at improving healthcare access and advancing cutting-edge treatments, such as monoclonal antibodies for cancer and other complex diseases. Additionally, Southern India is home to top-tier medical and pharmaceutical universities that produce a highly skilled workforce in fields like biotechnology and molecular biology, supporting the region's growing pharmaceutical sector and further fueling the mAb market's expansion.

Key Market Players

Dr. Reddy's Laboratories Ltd.

Bristol Myers Squibb India Pvt. Ltd.

Roche India Pvt. Ltd.

Intas Pharmaceuticals Limited

Merck India

Eli Lilly, and Company (India) Private Limited

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Biocon Limited

AstraZeneca India Pvt. Ltd.

Pfizer Limited

Report Scope:

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

India Monoclonal Antibodies Market, By Type:

Murine

Chimeric

Humanized

Human

India Monoclonal Antibodies Market, By Application:

Cancer

Cardiac/Cardiovascular

Neurological

Others

India Monoclonal Antibodies Market, By Production:

In vitro

In vivo

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India Monoclonal Antibodies Market, By Biomanufacturing:

Originator

CMO

India Monoclonal Antibodies Market, By End User:

Hospitals

Research Laboratories

Others

India Monoclonal Antibodies Market, By Region:

West India

North India

South India

East India

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the India Monoclonal Antibodies Market.

Available Customizations:

India Monoclonal Antibodies 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

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

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