

mRNA Synthesis & Manufacturing Market by Product (Consumables [Transcription, Purification, Analysis & Characterization], Instrument), Service (Synthesis, Purification, Manufacturing & Scale-up), Application (CGT, Vaccines) - Global Forecast to 2029

Market Report | 2024-10-16 | 344 pages | MarketsandMarkets

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Report description:

The mRNA synthesis and manufacturing market is expected to reach USD 738.3 million in 2029 from USD 624.4 million in 2024, at a CAGR of 3.4% during the forecast period. mRNA therapeutics hold promise as the next generation of drugs for tissue restoration in regenerative medicine. The development of non-immunogenic mRNA can be achieved through the use of modified nucleosides, which enhances safety and efficacy. By altering the mRNA structure, researchers can create stable, non-immunogenic mRNA through in vitro transcription. Furthermore, effective delivery strategies tailored specifically for mRNA are crucial for the advancement of these therapies. The processes involved in loading and releasing mRNA from biomaterials are essential for their application in tissue restoration and require further refinement to maximize their potential.

"The transcription consumables segment accounted for the largest share by product segment in the mRNA synthesis and manufacturing market in 2023."

Based on product, the mRNA synthesis and manufacturing market is segmented into consumables, and instrument. In 2023, the consumables segment accounted for the largest share of mRNA synthesis and manufacturing market; this segment is further segmented into transcription consumables, purification consumables, and analysis & characterization consumables. Dominance of the consumables segment throughout the forecast period is attributed to the fact that they are essential for mRNA synthesis and manufacturing. Unlike instruments, which are a one-time investment, consumables must be replenished regularly, leading to continuous demand. Also, the entire market operates majorly on instruments offered by Thermo Fisher Scientific Inc. (US), Sartorius AG (Germany), whereas more companies operate in the consumables space for mRNA synthesis and manufacturing.

"The mRNA synthesis & modification service segment is expected to grow at the highest growth rate in the mRNA synthesis and manufacturing market throughout the forecast period."

Based on service, the mRNA synthesis and manufacturing market is segmented into mRNA synthesis & modification, mRNA purification, mRNA analysis & characterization, and manufacturing & scale-up. In 2023, the mRNA synthesis & modification segment accounted for the largest share of the mRNA synthesis and manufacturing market. A significant driver for the mRNA synthesis and modification services within the mRNA synthesis and manufacturing market is the growing need for customized mRNA sequences and modifications to enhance the efficacy and stability of therapeutic and vaccine candidates, which requires specialized synthesis and modification services. As the application of mRNA technology expands, researchers and developers increasingly seek tailored mRNA sequences that can be optimized for specific therapeutic outcomes, such as improved protein expression or enhanced immune response.

"The Asia Pacific region is growing at the highest CAGR in the mRNA synthesis and manufacturing market from 2024 to 2029." The mRNA synthesis and manufacturing market is segmented into six major regions: North America, Europe, the Asia Pacific, Latin America, the Middle East, and Africa. The Asia Pacific is the fastest-growing regional segment in the global mRNA synthesis and manufacturing market, Factors such as rising healthcare expenditure; growing R&D expansion in key markets such as India, China, and Japan; low labor costs; and the favorable regulatory environment in the region are expected to contribute to market growth. China's mRNA synthesis and manufacturing market is driven by the country's substantial government investments in biotech innovation, rapid expansion of domestic biotech infrastructure, and increasing international collaborations. In recent developments, China has demonstrated a strong commitment to advancing mRNA technology.

The primary interviews conducted for this report can be categorized as follows:

- By Company Type: Tier 1 55%, Tier 2 25%, and Tier 3 20%
- By Designation: Directors 50%, Managers 30%, and Others 20%
- By Region: North America -40%, Europe -35%, Asia-Pacific -20%, ROW -5%

List of Companies Profiled in the Report:

- -□Merck KGaA (Germany)
- Thermo Fisher Scientific Inc. (US)
- GenScript (US)
- -□New England Biolabs (US)
- AldevronLLC. (Danaher Corporation) (US)
- -□Promega Corporation (US)
- -□Sartorius AG (Germany)
- -□WuXi Biologics (China)
- Takara Bio Inc. (Japan)
- -□GENEWIZ (Azenta USInc.) (US)
- TriLink BioTechnologies (US)
- -□Lonza (Switzerland)
- -∏Telesis Bio Inc. (US)
- Aurigene Pharmaceutical Services Ltd. (Dr. Reddy's Laboratories Ltd.) (India)
- ST Pharm (South Korea) AGC Biologics (US)

Research Coverage:

This research report categorizes the mRNA synthesis and manufacturing market by Product (transcription consumables, purification consumables, analysis & characterization consumables, and instrument), Application (cell and gene therapy, vaccine, and other applications), End User (pharmaceutical & biotechnology companies, academic & research institutes, CROs & CDMOs) and by region (North America, Europe, Asia Pacific, Latin America, Middle East, and Africa). The scope of the report covers detailed

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information regarding the major factors, such as drivers, challenges, opportunities, and restraints influencing the growth of the mRNA synthesis and manufacturing market. A detailed analysis of the key industry players has been done to provide insights into their business overview, service portfolio, key strategies such as collaborations, partnerships, expansions, agreements, and acquisitions, and recent developments associated with the mRNA synthesis and manufacturing market. Competitive analysis of top players and upcoming startups in the mRNA synthesis and manufacturing market ecosystem is covered in this report. Key Benefits of Buying the Report:

The report will help market leaders/new entrants by providing them with the closest approximations of the revenue numbers for the overall mRNA synthesis and manufacturing market and its subsegments. It will also help stakeholders better understand the competitive landscape and gain more insights to better position their business and make suitable go-to-market strategies. This report will enable stakeholders to understand the market's pulse and provide them with information on the key market drivers, restraints, opportunities, and challenges.

The report provides insights on the following pointers:

- Analysis of key drivers (Growing focus on mRNA-based vaccine development, expanding therapeutic applications of mrna technology, advancements in mrna synthesis technology, increased outsourcing for mrna synthesis and modification, and collaborations among industry players), restraints (High production cost, stringent regulations), opportunities (Advancements in drug delivery technologies, increased government funding and private investment, applications in regenerative medicines), and challenges (Stability, storage, and manufacturing scalability) influencing the growth of the market.
- Product Development/Innovation: Detailed insights on newly launched products of the mRNA synthesis and manufacturing market
- Market Development: Comprehensive information about lucrative markets the report analyses the market across varied regions.
- Market Diversification: Exhaustive information about new services, untapped geographies, recent developments, and investments in the mRNA synthesis and manufacturing market
- Competitive Assessment: Merck KGaA (Germany), Thermo Fisher Scientific Inc. (US), GenScript (US), New England Biolabs (US), Aldevron, LLC. (Danaher Corporation) (US), Promega Corporation (US), Sartorius AG (Germany), WuXi Biologics (China), Takara Bio Inc. (Japan), GENEWIZ (Azenta US, Inc.) (US), TriLink BioTechnologies (US), Lonza (Switzerland), Telesis Bio Inc. (US), Aurigene Pharmaceutical Services Ltd. (Dr. Reddy's Laboratories Ltd.) (India), ST Pharm (South Korea), AGC Biologics (US), among others in the market.

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