

Transfection Reagents and Equipment Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The transfection reagents and equipment market was valued at USD 975.79 million in 2021 and is expected to register a CAGR of nearly 7.37% during the forecast period.

Many companies developing COVID-19 vaccines are using viral vectors to ensure effective vaccine delivery. However, the production of the viral vectors can be a cumbersome and challenging process, and any improvement to that process could result in more vaccines being made available faster. The viral vector producing cells need to be transfected with multiple plasmids carrying various viral genes and the 'payload,' the vaccine. In May 2020, Bharat Biotech partnered with the US-based Thomas Jefferson University (TJU) to develop its experimental new viral-vector vaccine candidate Coravax to combat COVID-19 under the accelerated development program. As the research and development of COVID-19 vaccines gain pace and transfection reagents and equipment find applications in the production and research of vaccines, the market studied is expected to grow over the forecast period.

The major factors driving the market growth include technological advancements in transfection, increased R&D expenditure and activities by pharmaceutical and biotech companies, and a rise in demand for synthetic genes. The introduction of transfection technologies has laid the foundation for genetic dissection of several causative agents of several diseases, and recent years have seen the development of novel tools for genetic manipulation that will help the scientific community delineate the intriguing biology of a wide variety of parasites. Academic research trends continue to drive transfection technology advancements.

Over the forecast period, researchers are expected to use more biologically relevant, yet hard-to-transfect cell models in addition to the standard immortalized cell lines, along with a broader range of nucleic acids, such as RNA variants. These possibilities lead to interesting twists that demand innovation. Market players are also focusing on launching new products for pharma and biotech

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firms, which is likely to augment the growth of the respective segment during the forecast period. For instance, in July 2020, Polyplus-transfection, a French biotechnology company specializing in innovative transfection solutions for gene and cell therapy production, launched its GMP-compliant residual test for its PEIpro product portfolio, transfection reagents designed for process development, pre-clinical, clinical, and commercial lentivirus, and Adeno-Associated Virus (AAV) production for cell and gene therapies.

Thus, technological advancements in transfection, an increase in research and development expenditure by pharmaceutical and biotechnological companies, and the growing demand for synthetic genes are expected to promote the revenue growth of the transfection reagents and equipment market. However, the high cost of transfection reagents and selective effectiveness and certain limitations of transfection reagents can restrain the market growth over the forecast period.

Transfection Reagents & Equipment Market Trends

Pharmaceutical & Biotechnology Companies Expected to Hold a Significant Share in the End-user Segment

The use of biopharmaceutical products has remarkably increased over the years for the treatment of multiple pathological conditions, such as genetic diseases, cancer, etc. With the growing burden of diseases, the need for early diagnosis and treatments also increases. The pharmaceutical and biotechnology companies have increased their investment and research for such therapies, and as the transfection reagent and equipment are highly required in such research processes, the segment is expected to drive the growth of the market.

The segment growth is also propelled by the launch of efficient biology services by different market players. For instance, in November 2020, Eli Lilly and Company and Precision BioSciences Inc. collaborated to utilize Precision's proprietary ARCUS genome editing platform for the research and development of potential in vivo therapies for genetic disorders, with an initial focus on Duchenne Muscular Dystrophy (DMD) and two other undisclosed gene targets.

Additionally, the market players strategically involved licensing agreements to use transfection platforms for high efficiency. For instance, in July 2020, APEIRON Biologics AG and MaxCyte Inc. signed a clinical and commercial licensing agreement. Through the agreement, APEIRON Biologics obtains non-exclusive clinical and commercial rights to use MaxCyte's Flow Electroporation technology and EXPERT platform for the advancement of APN401, a siRNA-based cell therapy currently in clinical development for various solid tumors. Thus, such agreements are propelling the growth of the market.

The segment's growth is also boosted by the launch of new products in the market. For instance, in April 2021, BOC Sciences announced the launch of two in vivo RNA transfections, namely, siRNA in vivo transfection kits and mRNA in vivo transfection kits, which are suitable for in vivo transfection of siRNA and mRNA, respectively. Thus, due to the aforementioned factors, the pharmaceutical and biotechnology companies' market segment is expected to show growth over the forecast period.

North America Dominates the Market and Expected to Continue Dominance Over the Forecast Period

In the North American region, the US is expected to have a significant share over the forecast period in the transfection reagents and equipment market. Factors such as increasing investments in research and development in genomics and the availability of advanced technologies are expected to fuel the market growth in the US.

For instance, in September 2021, the National Institutes of Health awarded USD 16 million to the University of Washington School of Medicine's scientists and their collaborators to fund two projects within the consortium. The first project aims at studying the more than one million known regulatory elements in the genome and their variants to determine how they affect gene expression. The second project aims at studying the effect of about 200,000 single nucleotide variants, which contain a change of a single

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DNA molecule in a gene sequence in about 32 genes that are witnessed in specific diseases, including cancer.

In addition, in April 2021, BOC Sciences released in vivo RNA transfection kits in the company's popular in vivo delivery product series, including siRNA in vivo transfection kits and mRNA in vivo transfection kits, which are suitable for in vivo transfection of siRNA and mRNA, respectively. The company also provides customized products that encapsulate target molecules into in vivo transfection reagents that target specific tissues.

Moreover, in August 2021, Mirus Bio expanded its TransIT VirusGen platform, which is compliant with good manufacturing practices (GMP) viral vector manufacturing, to support cell and gene therapy development, process activities, and commercial production. The expansion, referred to as TransIT VirusGen GMP transfection reagent, is designed to enhance the delivery of packaging and transfer vector DNA to suspension and adherent HEK 293 cell types to increase the production of recombinant adeno-associated virus and lentivirus vectors.

Transfection Reagents & Equipment Market Competitor Analysis

The global transfection reagents and equipment market is moderately competitive and consists of a number of major players. Companies like Bio-Rad Laboratories, Lonza Group, MaxCyte Inc., Merck KGaA, Mirus Bio, Polyplus-transfection SA, Promega Corporation, QIAGEN NV, Thermo Fisher Scientific Inc., among others, hold a substantial share in the transfection reagents and equipment market.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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