

Crispr Technology Market to Witness Huge Growth in Coming Years With Profiling Leading Companies| GenScript, GeneCopoeia

CRISPR technology market is experiencing strong growth due to the increase in disease burden and rising demand and adoption of CRISPR.

BURLINGAME, CALIFORNIA , UNITED STATES, November 27, 2023 /EINPresswire.com/ -- Market Overview:

Crispr technology is a biomedical tool that utilizes the clustered regularly interspaced short palindromic repeats (CRISPR) and associated protein (Cas) adaptive immune system in bacteria and archaea. This technology allows researchers to target and edit genes with high precision for treating genetic diseases and cancer.

Market Dynamics:

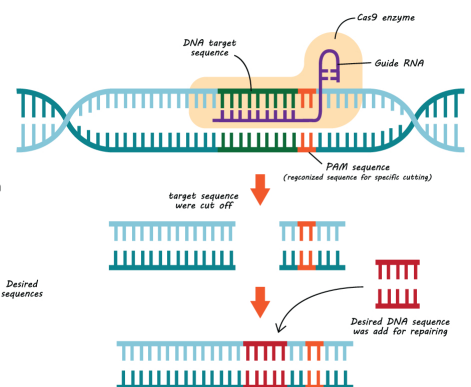
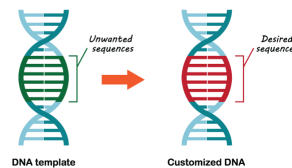
Crispr technology market is expected to witness significant growth due to increased funding from both public and private organizations on genome editing research. As per the report, in January 2023 the US National Institutes of Health awarded over \$200 million for research focusing on developing safe and effective Crispr therapies. Additionally, various pharmaceutical companies are also investing heavily in developing novel Crispr-based therapies. For instance, in 2022 Vertex Pharmaceuticals invested \$175 million to fund research on Crispr-based therapies for cystic fibrosis and sickle cell disease. Such increased research funding is expected to accelerate the development of Crispr clinical trials and broaden its applications, thus driving the market growth over the forecast period.

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How does CRISPR-Cas9 work?

- Adapted from defense mechanism against virus of bacteria
- Cas9 is an enzyme using guide RNA leading to cut target DNA sequence
- Desired genetic sequence could add in repairing system for customize DNA



Crispr Technology Market

Driver : Rising Prevalence of Genetic Disorders and Diseases

The rising prevalence of genetic disorders and diseases around the world is a major driver pushing growth in the CRISPR technology market. Genetic diseases like sickle cell anemia, cystic fibrosis, and various types of cancer have a significant global disease burden. CRISPR genome editing holds potential for developing new treatments and even cures for these conditions by precisely correcting defective genes. Over 6,000 rare genetic disorders have been identified so far, many of which currently have no cure. CRISPR provides hope that at least some of these diseases may become treatable or preventable through targeted genome modification. The growing consumer demand for advanced gene therapies and personalized medicine solutions will encourage more R&D investment in CRISPR applications going forward.

Potential for Agricultural Advancements

The CRISPR technology also provides opportunities to enhance agriculture and increase global food security over the long run. By modifying plant genomes, CRISPR can help develop new crop varieties with higher yields, improved tolerance to pests and diseases, and better resilience to extreme weather caused by climate change. This will support sustainable intensification of agriculture which is crucial given the rising world population. CRISPR can potentially engineer crops that are drought-resistant, require less fertilizers and pesticides, contain higher levels of important nutrients, or have resistance to viral and fungal infections. As global demand for food rises dramatically in the coming decades, CRISPR derived agricultural biotech solutions will be increasingly adopted.

Restrain: Ethical and Regulatory Concerns

Despite the promise, ethical and regulatory issues surrounding CRISPR technology pose a significant restraint on its adoption. There are concerns that allowing unrestricted human genome editing could be the start of a "slippery slope" toward eugenics or enhancement of humans in non-medical ways like increasing intelligence. Regulators are also worried about off-target mutations and unexpected long term health effects of genome modifications. Given these risks, many countries currently have bans or moratoriums on utilizing CRISPR in human reproduction. Extensive safety testing will be required to allay such ethical concerns and get regulatory approvals for clinical trials and product commercialization. Navigating complex socio-ethical issues remains a major challenge restraining faster growth of the CRISPR market currently.

Opportunity: Cell and Gene Therapy Applications

The potential use of CRISPR in developing advanced cell and gene therapies presents a major opportunity for the technology market. CRISPR allows precisely editing genes within living cells, a capability that can be harnessed to treat various forms of cancer, blood disorders, infectious

diseases, and even degenerative conditions like macular degeneration. Several gene therapy companies are actively exploring CRISPR's use in developing off-the-shelf therapies using engineered immune cells or stem cells. If clinical trials demonstrate CRISPR derived therapies as safe and effective options for presently incurable illnesses, it could drive billions in revenue. As the cell and gene therapy industry expands significantly in the coming years, CRISPR is well-positioned to play a pivotal role in developing transformative new treatments.

Trend: Focus on In Vivo Applications

While most initial research using CRISPR focused on editing genes in cell cultures or altering animal models in laboratories, there is a major trend now towards developing in vivo applications of the technology. In vivo gene editing holds promise to directly treat illnesses inside the body by delivering modified viruses or nanoparticles carrying CRISPR/Cas9 payloads. This overcomes limitations of ex vivo gene therapies requiring harvesting, modifying, and reinjecting cells. Several startups are exploring inhaled or injectable CRISPR delivery methods for conditions like cystic fibrosis or blood disorders with encouraging early animal study results. As technical hurdles around ensuring specific in vivo editing and avoiding immunogenic responses are addressed, CRISPR in vivo applications will gain more momentum in the coming years and open up new multi-billion dollar market opportunities.

Moreover, it will also include the opportunities available in micro markets for stakeholders to invest, a detailed analysis of the competitive landscape, and product services of key players. Analysis of Crispr Technology companies, key tactics followed by Leading Key Players:

- Merck KGaA
- Thermo Fisher Scientific
- Origene Technologies Inc.
- New England Biolabs
- GenScript
- GeneCopoeia Inc.
- Collecta Inc.
- Agilent Technologies Inc.
- PerkinElmer Inc. (Horizon Discovery Ltd.)
- Danaher Corporation (Integrated DNA Technologies)
- among others.

Note: Major Players are sorted in no particular order.

By Product:

Enzymes
Kits & Reagents
Guide RNA

Others

By Application:

Biomedical

Agricultural

Industrial

Others

By End User:

Pharmaceutical companies and Biotechnology Companies

Academics and Government Research Institutes

Others (CROs etc.)

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The Study Objectives are:

A comprehensive insight into key players operating in the Crispr Technology Market and their corresponding data.

It includes product portfolio, annual revenue, expenditure on research and development, geographical presence, key developments in recent years, and growth strategies.

Regional analysis, which includes insight into the dominant market and corresponding market share.

It also includes various socio-economic factors affecting the evolution of the market in the region.

The report offers a comprehensive insight into different individuals from value chains such as raw materials suppliers, distributors, and stockholders.

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Key Questions Answered:

What is the market size and CAGR of the Crispr Technology Market during the forecast period?
How is the growing demand impacting the growth of Crispr Technology Market shares?
What is the growing demand of the Market during the forecast period?
Who are the leading vendors in the market and what are their market shares?
What is the impact of the COVID-19 pandemic on the APAC Crispr Technology Market?

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