Global Lab Automation in Protein Engineering Market Segmented by Type of Equipment, Software, Analyzers, Plate Readers and Geography Forecasts, Shares and Trends (2016 - 2021)

Description: The emergence of robotics has transformed the typical workday for scientists around the world. With the advent of automation techniques, scientists are now able to set up, run and analyze the results of experiments in a fraction of the time they needed in the past. In today's world, pulling maximum efficiency out of every department, including the R & D labs, is a major issue.

Protein engineering involves various steps like macromolecular structure determination, from scaling data to calculating an electron density map. Software can be used to improve electron density maps through a statistical approach in combining experimental X-ray diffraction data with information about the expected characteristics of an electron map. Automation helps scientists to understand and solve the mysteries of protein dysfunction, including misfolding, aggregation, and abnormal movement. This will, in turn, help in monitoring the expression level of a target protein facilitating more effective drug discovery. Automation of routine laboratory procedures, by the use of dedicated work stations and software to program instruments, allows associate scientists and technicians to think creatively about the implications of their experiments and to design effective follow-up projects or develop alternative approaches to their work instead of spending their days repeating tedious tasks.

Apart from reducing mundane tasks, the market for laboratory automation is also driven by the need for consistency in quality. Because, the cost of an error is very high in a scientific paper or developing a drug, even fairly low error rates can have a profound impact on the conclusions you make downstream.

It is believed that taking out the human element helps in achieving more consistency. Great advances have been made in the molding of plastics that has reduced the volumes of reagents used and enabled handling of smaller liquid volumes easy. These advancements have worked in favor of the development of micro and nano-litre plates to fit in with the automated liquid handling equipment.

Validation and data quality play a major role in modern life science. Legal validation, patents, and clinical testing have become crucial issues. Automation enables a much higher reproducibility and better documentation of data. This allows the production of more data points with great ease. It also ensures the safety of personnel in the presence of infectious or potentially hazardous material.

Automation is used in a wide variety of life science applications ranging from proteomics to systems biology. Automation is a dominant feature in the diagnostics market followed by the discovery and research labs. In clinical diagnostics, where profits are based on the number of samples, high throughput is the core driving factor. Total automation is generally preferred in such labs and manufacturing setups. Research labs and academic institutions are generally opting for modular automation, wherein they reduce the human intervention in tedious and repetitive tasks.

North America is clearly the market leader with a total market share of 60%, followed by Europe. Asia and Latin America are emerging as there has been a considerable increase in outsourcing pharmaceutical manufacturing to these regions due to the availability of cheaper labor and resources.

This report analyzes the market across various geographies with the key trends in each region. It provides the market share and profiles of the top companies involved in lab automation. The report also provides insights on how the market will vary within the next five years.

DRIVERS
- Advancement in plastic molding technology
- Development of smaller automated machines
- Need for higher reproducibility and effective management of the vast amounts of data generated

RESTRAINTS
- Initial setup is expensive
- Loss of flexibility in process
- Interconnecting various platforms across the lab

Key Deliverables in the Study

- Market analysis for the global lab automation in protein engineering market, with region-specific assessments and competition analysis on a global and regional scale.
- Market definition along with the identification of key drivers and restraints.
- Identification of factors instrumental in changing the market scenario, rising prospective opportunities, and identification of key companies that can influence this market on a global and regional scale.
- Extensively researched competitive landscape section with profiles of major companies along with their market share.
- Identification and analysis of the macro and micro factors that affect the global lab automation in protein engineering market on both global and regional scale.
- A comprehensive list of key market players along with the analysis of their current strategic interests and key financial information.
- A wide-ranging knowledge and insights about the major players in this industry and the key strategies adopted by them to sustain and grow in the studied market.
- Insights into the major countries/regions where this industry is growing and also identify the regions that are still untapped.

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