CRISPR And CRISPR-Associated (Cas) Genes Market Analysis By Product (Vector-Based & DNA-Free Cas), By Application (Genome Engineering, Disease Models, Functional Genomics), By End-Use, And Segment Forecasts, 2014 - 2025

Description: The Clustered regularly interspaced short palindromic repeats CRISPR and CRISPR-associated (Cas) genes market is anticipated to reach USD 4.09 billion by 2025. This genome editing principle spans almost every industry that involves biological systems. The rising adoption of technology in different areas associated with biotechnology is anticipated to drive industrial growth of the technology substantially in the coming years.

Possibility of rewriting the host DNA through the virtue of Cas9 by introduction of major modifications can be attributed for rising adoption of technology. These modifications include inversion, deletions, knockouts, translocations, and gene replacement.

Moreover, application of the technology as a qualitative as well as quantitative tool in plant genome editing is expected to propel growth. The technique holds the potential for producing plants with mutations linked to other disciplines of science such as disease resistance, biofuel production, synthetic biology, phytoremediation and abiotic stress tolerance.

Combination of clustered regularly interspaced short palindromic repeats and sequencing technology enables high-throughput analysis of gene regulation thereby resulting to enhancement in genomics sector. The aforementioned combination is applicable in the epigenetic study of diseases such as leukemia.

However, off-target effects associated with the implementation of CRISPR is anticipated to impede growth in the coming years. These effects include improper concentration ratio between Cas9 and single guide RNA that may result into off-target cleavage.

Further Key Findings from the Report Suggest:

High cost involved with mRNA and protein as compared to plasmid is attributive for larger share of vector based Cas9

Rapid turn-over obtained through the utilization of RNA and protein is anticipated to drive the usage of DNA free Cas9 products

Genome engineering dominated amongst the other applications as a consequence of higher use of Cas9 in different procedures

These procedures include Non-Homologous End Joining (NHEJ) and Homology Directed Repair (HDR) in plant genome editing and biomedical applications

Disease models and knockdown or activation are anticipated to witness hand in hand growth over the forecast period

Transgenic models are projected to witness lucrative growth as a result of application of technique for creation of novel in vivo neurodegenerative disease models

Biotechnology and pharmaceutical organizations accounted for the largest share of the market

These organizations are engaged in collaborating for the development of therapies using the Crispr-Cas9 gene-editing system

Asia Pacific is anticipated to witness lucrative growth over the forecast period.

The economies of this region are engaged in embarking clinical trials with the CRISPR gene-editing tool
Moreover, the university based projects implemented herein are attributive for the projected growth.

Key players contributing in this market are Merck KGaA, Addgene, CRISPR THERAPEUTICS, Thermo Fisher Scientific, Inc., Mirus Bio LLC, Editas Medicine, Takara Bio USA, Horizon Discovery Group plc, GE Healthcare Dharmacon Inc, and Intellia Therapeutics, Inc.

These participants are pushing forward with development of CRISPR-based therapies and some are expected to begin clinical development as early as next year.
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