

## Deoxyribonucleic Acid (DNA) Read, Write And Edit Market Projected to Reach \$19.28 Billion with 17.3% CAGR by 2029

The Business Research Company's Deoxyribonucleic Acid (DNA) Read, Write And Edit Global Market Report 2025 – Market Size, Trends, And Global Forecast 2025-2034

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What Is The Expected Cagr For The <u>Deoxyribonucleic Acid (DNA) Read, Write And Edit Market</u> Through 2025?



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The market size for the reading, writing, and editing of deoxyribonucleic acid (DNA) has seen significant growth in recent times. Currently valued at \$8.65 billion in 2024, this market is projected to hit \$10.18 billion in 2025, exhibiting a compound annual growth rate (CAGR) of 17.7%. The historic growth of this market is due to factors such as the rising incidence of genetic disorders, increased demand for personalized medicine, expansion of academic and industrial research in genomics, growing utilization of next-generation sequencing, and the rise in government and private funding for sequencing infrastructure.

Expectations are set high for dramatic expansion in the market size for DNA reading, writing, and editing over the next few years. By 2029, it is projected to reach an impressive valuation of \$19.28 billion, exhibiting a compound annual growth rate (CAGR) of 17.3%. This anticipated expansion in the forecast period is attributable to several key factors, including escalating demand for precision medical treatments, increasing investment in DNA-related data storage, wider acceptance of synthetic biology, proliferation of DNA sequencing services, and heightened

awareness for early detection of diseases. The key trends that are predicted to shape the this period of growth include strides forward in genome editing technology, ongoing innovation in DNA synthesis processes, advancement in portable sequencing apparatus, significant progress in research and development, and enhancements in bioinformatics tools.

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What Are The Key Factors Driving Growth In The Deoxyribonucleic Acid (DNA) Read, Write And Edit Market?

The escalating occurrence of genetic disorders is projected to stimulate the advancement of the deoxyribonucleic acid (DNA) read, write, and edit market in the future. These medical conditions, caused by abnormalities in an individual's deoxyribonucleic acid either through inheritance from one or both parents or evolving from fresh mutations, are escalating due to the increased age of parents. Older parents bear a higher risk of transmitting genetic mutations to their offspring. Reading, writing, and editing deoxyribonucleic acid (DNA) can ameliorate these genetic disorders by allowing for precise identification, rectification, and alteration of genes causing diseases. These techniques not only enhance healthcare outcomes but also facilitate targeted therapies, lessen the risk of inherited conditions, and promote personalized medicine for affected patients. For instance, data from the UK-based government department, National Health Service, in May 2024 stated that about 17,000 people were living with the inherited genetic blood disorder called sickle cell disease, with an estimated 250 new cases diagnosed every year. Consequently, the escalating occurrence of genetic disorders is fueling the advancement of the deoxyribonucleic acid (DNA) read, write, and edit market.

What Are The Top Players Operating In The Deoxyribonucleic Acid (DNA) Read, Write And Edit Market?

Major players in the Deoxyribonucleic Acid (DNA) Read, Write And Edit Global Market Report 2025 include:

- Roche Holding AG
- Bayer AG
- Thermo Fisher Scientific Inc.
- Danaher Corporation
- Agilent Technologies Inc.
- MGI Tech
- Bio-Rad Laboratories Inc.
- BGI Group
- Ginkgo Bioworks
- Oxford Nanopore Technologies

What Are The Key Trends Shaping The <u>Deoxyribonucleic Acid (DNA) Read, Write And Edit Industry</u>?

Leading businesses in the deoxyribonucleic acid (DNA) reading, writing, and editing market are

turning their attention to developing progressive products such as top-notch, regulatory-approved synthetic DNA, with the aim of quickening research, ensuring safety, and assisting in the commercial launch of advanced treatments. This kind of synthetic DNA is artificially created DNA which is accurate, free from contaminants, and developed in line with safety and legal regulations, making it ideal for research, diagnostics, and therapeutic uses. To illustrate, GenScript Inc., a biotechnology company based in the US, introduced GenExact (GMP single-stranded DNA) and GenWand (GMP closed-end linear double-stranded DNA) services in May 2022. These services facilitate swift progression from research and development to investigational new drug (IND) filing and clinical trials, by supplying high-quality HDR templates that are non-viral, promoting safer and more efficient CRISPR non-viral gene insertion for advanced cell and gene therapies. This DNA, produced in dedicated cGMP facilities and supported by full documentation and regulatory backing, is robustly examined to ensure it upholds standards for identity, purity, potency, and safety, thus presenting a dependable and expandable source of genetic material suitable for therapeutic applications.

Comprehensive Segment-Wise Insights Into The Deoxyribonucleic Acid (DNA) Read, Write And Edit Market

The deoxyribonucleic acid (DNA) read, write and edit market covered in this report is segmented

- 1) By Types: Kits And Reagents, Cell Line Engineering, Animal Models, Services
- 2) By Technology: Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR), Transcription Activator-Like Effector Nucleases (Talen), Zinc Finger Nucleases, Other Technologies
- 3) By Delivery Mode: Viral Vectors, Non-Viral Vectors, Electroporation, Microinjection
- 4) By Application: Gene Therapy, Diagnostics, Biotechnology, Agricultural, Synthetic Biology
- 5) By End Users: Pharmaceutical And Biotechnology Companies, Academic And Research Institutes, Clinical Research Organizations

## Subsegments:

- 1) By Kits And Reagents: Deoxyribonucleic Acid Kits (DNA Kits), Ribonucleic Acid Kits (RNA Kits), Protein Assay Kits (PA Kits), Gene Editing Reagents (GER), Polymerase Chain Reaction Reagents (PCR Reagents)
- 2) By Cell Line Engineering: Stable Cell Lines (SCL), Transient Cell Lines (TCL), Hybridoma Cell Lines (HCL), Reporter Cell Lines (RCL), Primary Cell Lines (PCL)
- 3) By Animal Models: Transgenic Animals (TA), Knockout Animals (KA), Humanized Animals (HA), Xenograft Models (XM), Inbred Strains (IS)
- 4) By Services: Custom Gene Editing (CGE), Cell Line Development (CLD), Animal Model Development (AMD), Analytical Testing Services (ATS), Consulting Services (CS)

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Global Deoxyribonucleic Acid (DNA) Read, Write And Edit Market - Regional Insights In 2024, North America stood as the leading region in the global market for DNA read, write, and edit. It is projected that Asia-Pacific will experience the most rapid growth in the mentioned forecast period. The report encompasses several regions including Asia-Pacific, Western Europe, Eastern Europe, North America, South America, Middle East, and Africa.

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Speak With Our Expert:

Saumya Sahay

Americas +1 310-496-7795

Asia +44 7882 955267 & +91 8897263534

Europe +44 7882 955267

Email: saumyas@tbrc.info

The Business Research Company - <u>www.thebusinessresearchcompany.com</u>

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Oliver Guirdham

The Business Research Company

+44 7882 955267

info@tbrc.info

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