

2024 DNA and RNA Synthesis Research Review

Market Research Report | 2025-03-20 | 184 pages | BCC Research

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Report description:

Description

Research Review Scope

DNA and RNA synthesis artificially manufactures deoxyribose nucleic acid (DNA) and ribonucleic acid (RNA). Developing synthetic techniques to construct DNA and RNA has improved the ability to understand and engineer biology. Different types of synthesized DNA, such as oligonucleotides, genes, and DNA and RNA fragments, are available and can be utilized per the customer's needs. Synthetic DNA and RNA are used to develop new drugs and vaccines, gene therapies for genetic disorders, and the development of molecular diagnostic tools, including polymerase chain reaction (PCR) assays and nucleic-acid-based sensors, to detect pathogens and diseases.

DNA and RNA synthesis technology is vital in scientific fields such as synthetic biology, molecular genetics, and bioengineering, creating custom DNA and RNA sequences for various research, diagnostic, and therapeutic applications. The rapid expansion of genomics research, advancements in therapeutic DNA and RNA applications, and the growing need for personalized medicine are driving exceptional growth in the DNA & RNA synthesis market. The innovations in CRISPR, gene therapy, and synthetic biology show that the demand for DNA and RNA synthesis has risen sharply, positioning it as a pivotal tool in developing targeted treatments and innovative genetic research solutions.

Research Reviews from BCC Research provide market professionals with concise market coverage within a specific research category. This 2024 Research Review of DNA and RNA synthesis technology provides a sampling of the type of quantitative market information, analysis, and guidance that BCC Research has been developing since its inception in 1971 to help its customers make informed business decisions. This Research Review includes highlights and excerpts from the following reports published by BCC Research in 2024:

- BIO259A Gene Editing Therapeutics Market
- BIO045J Global DNA Sequencing: Research Applied and Clinical Markets
- BIO126E Next-generation Sequencing: Emerging Clinical Applications and Global Markets
- BIO147B RNA Sequencing: Technologies and Global Markets

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- BIO127C RNAi Technologies and Global Markets
- BIO192B Viral Vector and Plasmid DNA: Technologies and Global Markets

After you survey the excerpts in this Research Review, we encourage you to follow up on these topics by checking out the full market research reports associated with each topic. BCC Research looks forward to serving your market intelligence needs in the future.

Executive Summary

Summary:

- The global market for DNA sequencing is expected to grow from \$14.8 billion in 2024 and is projected to reach \$34.8 billion by the end of 2029, at a compound annual growth rate (CAGR) of 18.6% during the forecast period of 2024 to 2029.
- The global market for clinical applications of next-generation sequencing is estimated to increase from \$21.9 billion in 2023 to reach \$52.9 billion by 2028, at a CAGR of 19.3% from 2023 through 2028.
- The global market for RNA sequencing is expected to grow from \$4.3 billion in 2024 and is projected to reach \$10.3 billion by the end of 2029, at a CAGR of 19.1% during the forecast period of 2024 to 2029.

DNA and RNA synthesis artificially manufactures deoxyribose nucleic acid (DNA) and ribonucleic acid (RNA). Developing synthetic techniques to construct DNA and RNA has improved the ability to understand and engineer biology. Different types of synthesized DNA, such as oligonucleotides, genes, and DNA and RNA fragments, are available and can be utilized per the customer's needs. Synthetic DNA and RNA are used to develop new drugs and vaccines, gene therapies for genetic disorders, and the development of molecular diagnostic tools, including polymerase chain reaction (PCR) assays and nucleic-acid-based sensors, to detect pathogens and diseases.

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HCA-Organoid
Human Cell Atlas
Human Immunomics Initiative
Immunomonitor Consortium
Integration of Imaging and Fluid-Based Tumor Monitoring in Cancer Therapy Program
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