Next-generation Sequencing: Emerging Clinical Applications and Global Markets

Market Research Report | 2024-01-22 | 492 pages | BCC Research

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Report description:

Description

Report Scope:

The scope of the report includes clinical NGS technologies, applications, industries, initiatives, patents, and companies. The markets for NGS-based diagnostics are given for the years 2020, 2021, 2022, 2023 and 2028.

This report reviews the main sequencing technologies and explains why genetic variation is important in clinical testing. It then discusses some of the significant research initiatives that impact clinical NGS applications. Liquid biopsy formats are discussed. The main market driving forces are also discussed.

The report examines the markets by test complexity, clinical indication and test purpose. Test complexity refers to the plex level (i.e., the number of genetic markers that can be analyzed within a sample) and coverage (e.g., the extent to which the genome is covered) of the test. Examining the market by test complexity provides valuable insight into which products (e.g., sample preparation, NGS instrument, informatics, etc.) will be in demand in the future.

The report provides market data and forecasts for NGS diagnostics by specific applications, including those for oncology, cardiovascular diseases, clinical microbiology/infectious diseases, Mendelian disorders, metabolic/immune disorders, neurological disorders, reproductive health, and transplant medicine.

Specific geographic markets are discussed, namely North America, Europe, Asia-Pacific, and the Rest of the World.

Industry sectors analyzed include DNA sequencing instruments; long-read sequencing; sequencing informatics; target enrichment; CTC capture and detection; liquid biopsy; cancer screening/early detection; direct-to-consumer testing; and noninvasive prenatal

testing.

More than 100 companies in the clinical NGS industry are profiled in this report.

BCC Research also provides a summary of the recent, primary industry acquisitions and strategic alliances, including key alliance trends.

Report Includes:

- 41 data tables and 237 additional tables
- An overview of the global market for emerging clinical applications of next-generation sequencing
- Analysis of global market trends, featuring historical revenue data for 2020 to 2022, estimates for 2023, as well as forecasts for 2028, including projections of compound annual growth rates (CAGRs) through 2028
- Evaluation of the current market size and revenue growth prospects, accompanied by a market share analysis by disease indication, test complexity, test purpose, application and geographic region
- Discussion of market opportunities for clinical NGS products, clinical applications, industry structure, regulatory scenarios and use of NGS-based diagnostics and technologies
- Coverage of genome mapping programs, technological advances and innovations in NGS platforms, and the Ion Torrent Genexus System from Thermo Fisher Scientific and the Magnis NGS Prep System lfrom Agilent Technologies Inc
- Description of NGS-oriented tests such as non-invasive prenatal testing (NIPT) and pre-implantation genetic testing (PGT), and a discussion of their advantages
- Market share analysis of the key companies and a look at their proprietary technologies, strategic alliances and other key market strategies, plus a patent analysis
- Profiles of the leading players, including Illumina Inc., Thermo Fisher Scientific Inc., QIAGEN, Agilent Technologies Inc., and BGI Genomics

Executive Summary

Summary:

Since NGS platforms can sequence an entire genomic region or even an entire genome, a single test can examine hundreds or thousands of clinically important genetic variations. This means that one test can replace multiple conventional single-gene tests, providing an advantage in price and in the amount of precious sample needed for the test itself.

NGS is often more accurate and reliable than existing diagnostics. This can result in better clinical outcomes. For example, NGS can increase the pregnancy success rates in in vitro fertilization applications. Also, in rare genetic diseases, NGS can increase the success rates for determining a molecular diagnosis.

The NGS platform enables companies to expand the menu of disorders/diseases over time after initial launch of a test. This strategy has been employed in reproductive health applications, for example, launching a test to initially screen for aneuploidies, and then later expanding the test to include screening for additional genetic variants.

These features of NGS platforms provide a solid basis for the use of this technology in the clinic.

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