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REPORT OVERVIEW



BIOINFORMATICS

Life Science Industry Market Research

NGS Library Prep Market Scan: Pinpointing Customer Needs and Opportunities for Growth

NOVEMBER 2013



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■ STUDY SCOPE

This report will help you to:

- Identify the top NGS applications
- Pinpoint the NGS applications with the greatest potential for growth in 2014
- Explore the range of biological samples used for NGS analysis
- Estimate the number of researchers and labs currently performing NGS
- Determine annual lab budgets associated with NGS sample and library preparation products
- Approximate supplier share by laboratory spending
- Assess market growth in terms of budget allocation in the next 12 months (through 2014)
- Identify the leading suppliers of NGS library preparation products by NGS application
- Gauge customer satisfaction, loyalty and likelihood to reorder NGS library preparation products
- Recognize key drivers of customer satisfaction for NGS library preparation products
- Anticipate the bottlenecks associated with NGS library preparation
- Assess the adoption of laboratory automation for NGS library workflow
- Discover the role of NGS service providers vis-à-vis sample preparation



■ REPORT HIGHLIGHTS

Samples for NGS Library Preparation

- Types of samples analyzed by NGS
- Preparation of DNA- and RNA-based libraries for NGS
- Sample types used to prepare DNA and RNA libraries
- Number of NGS libraries prepared per week
- Expected change in the number of NGS libraries prepared per week

NGS Applications

- Current NGS applications
- Adoption of new NGS applications during the next 12 months
- Percentage of NGS libraries prepared by application and throughput
- Expected percentage of NGS library preparation by application and throughput during the next 12 months

NGS Library Preparation

- Types of NGS libraries prepared
- DNA fragmentation methods
- NGS library amplification



■ REPORT HIGHLIGHTS (continued)

- Where NGS libraries are prepared
- Factors influencing where NGS libraries are prepared
- Bottlenecks associated with NGS library prep workflow

DNA Library Preparation

- Types of double-stranded DNA used to make DNA libraries
- Kit and reagent brands used to prepare DNA libraries
- Satisfaction with kit and reagent brands used to prepare DNA libraries
- Features that drive customer satisfaction with kit and reagent brands for preparing DNA libraries
- Likelihood to reorder and recommend brands used for DNA library prep

Targeted DNA Library Preparation

- Types of double-stranded DNA used to make targeted DNA libraries
- Target enrichment methods and products
- Brand preference for post-enrichment NGS library preparation
- Satisfaction with kit and reagent brands used to prepare targeted DNA libraries



■ REPORT HIGHLIGHTS (continued)

- Features that drive customer satisfaction with kit and reagent brands used to prepare targeted DNA libraries
- Likelihood to reorder and recommend brands used for targeted DNA library prep

RNA Library Preparation

- Types of RNA used to make RNA-Seq libraries
- Types of RNA analysis performed using NGS
- Kit and reagent brands used to prepare RNA-Seq libraries
- Brand preference for further RNA-Seq library manipulation
- Satisfaction with kit and reagent brands used to prepare RNA-Seq libraries
- Features that drive customer satisfaction with RNA-Seq kit and reagent brands
- Likelihood to reorder and recommend brands used for RNA-Seq library prep

Automation of NGS Sample and Library Preparation

- Types of automation incorporated into NGS sample prep workflow
- Automated phases of NGS sample prep workflow
- Motivation to automate NGS library prep workflow
- Brands of laboratory automation incorporated into NGS library prep workflow



- REPORT HIGHLIGHTS (continued)
- Factors that influence brand selection for automation

Lab Budgets for NGS Library Preparation

- Budget dedicated to NGS library preparation
- 2013 estimated supplier share

NGS Demographics

- Types of labs that utilize NGS
- Primary application
- Brands and models of NGS instrumentation
- Location of NGS instrumentation
- Providing NGS as a service
- Learning about new methods and products for NGS library preparation
- Laboratory size
- Areas of research
- Time frame for adopting NGS
- Utilization of core labs by new users



OVERVIEW

Next generation sequencing (NGS) is a disruptive technology with an ever-increasing number of users and applications. As such, it is **the fastest growing** and most attractive segment of all the different technologies that comprise the genomics universe. On a global scale, we estimate that about 22% of life science researchers use NGS in their work.

At the core of every cutting edge technology are the tools required to execute it, and next generation sequencing is no exception. Much of the hype surrounding NGS has **centered on the instruments**—ranging from benchtop models to those with production-scale capacity.

It is thanks to these tools that NGS has become a reality, allowing researchers to identify genomes, transcriptomes and epigenomes at **high speeds** and with a degree of **clarity** never before thought possible.



■ OVERVIEW (continued)

But preparing samples for sequencing is **no small piece of the puzzle**, as is evidenced by the growing number of companies that are jumping onto the NGS sample preparation bandwagon.

NGS Sample Prep Market Scan: Pinpointing Customer Needs and Opportunities for Growth targets the manufacturers and suppliers of NGS sample prep to help identify the usage, preferences and differentiators in a market that has attracted a significant number of players.

Suppliers recognize that there are **fewer barriers to entry** in the sample prep space compared to developing new sequencing platforms, thereby making sample prep product development more attractive—and on the rise.



■ OVERVIEW (continued)

Inherent in the sample prep market are **multiple opportunities to address differences** in sequencing platforms, methods of DNA fragmentation and, ultimately, the conversion of DNA or RNA samples into application-specific NGS libraries.

In this study, we will identify bottlenecks and areas that are causing the most frustration to researchers, but also point directly to opportunities for **innovation**.

We will cover areas of growth by application, segment and region. We will also examine how automation can conceivably change the **speed, consistency, accuracy and ease** with which researchers can expect to conduct next generation sequencing now and in the future.

With so many suppliers to choose from, how can a single supplier stand out? The foundation of a successful differentiation strategy is often a detailed understanding of the external environment.



OVERVIEW (continued)

In this report, we will:

- Identify the competitive mix by brand in the top product categories
 - DNA libraries: whole genome, ChIP and methylated DNA
 - Targeted resequencing: exome and panels
 - RNA libraries: total RNA, mRNA and small RNA
- Determine the **key drivers** of customer satisfaction in each product category
- Gain insights into customer satisfaction and loyalty

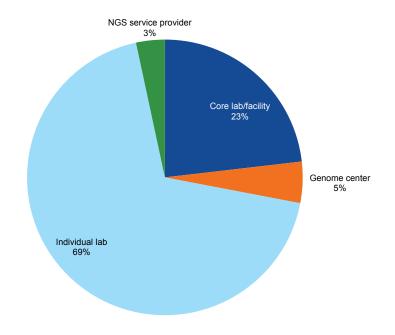
With literally **hundreds of products** available from dozens of suppliers, the ability to **fine-tune** your unique message, value proposition and product portfolio is more important than ever.

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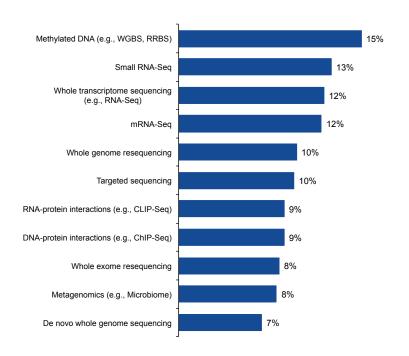




TYPES OF LABS THAT PERFORM NGS



NGS APPLICATIONS TO BE ADOPTED IN THE NEXT 12 MONTHS



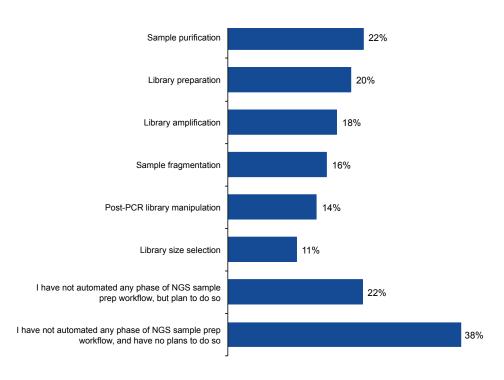




TYPES OF RNA ANALYSIS PERFORMED USING NGS

Total transcriptome Expressed transcriptome Non-coding RNA Targeted amplicon/expression profiling

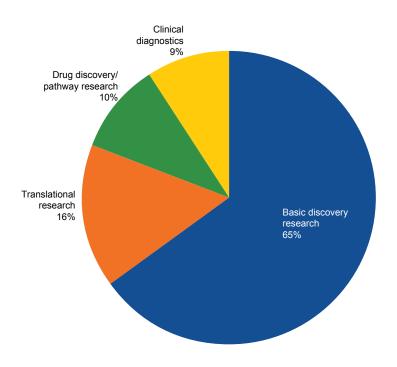
PHASES OF NGS SAMPLE PREP WORKFLOW THAT HAVE BEEN AUTOMATED



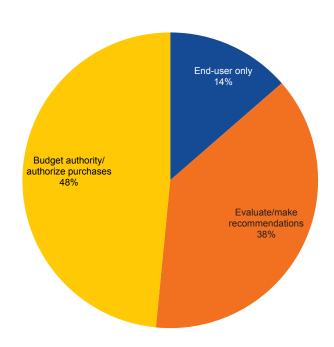




PRIMARY FOCUS OF NGS WORK



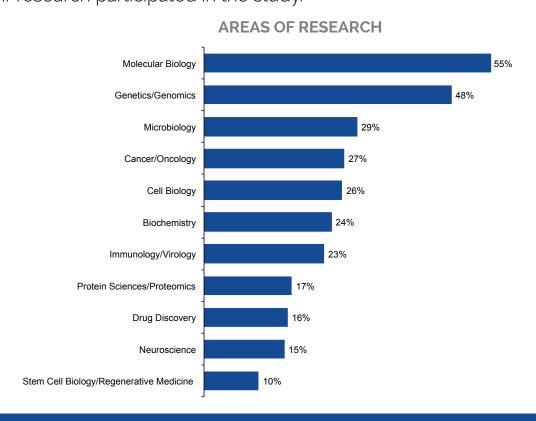
ROLE IN LAB



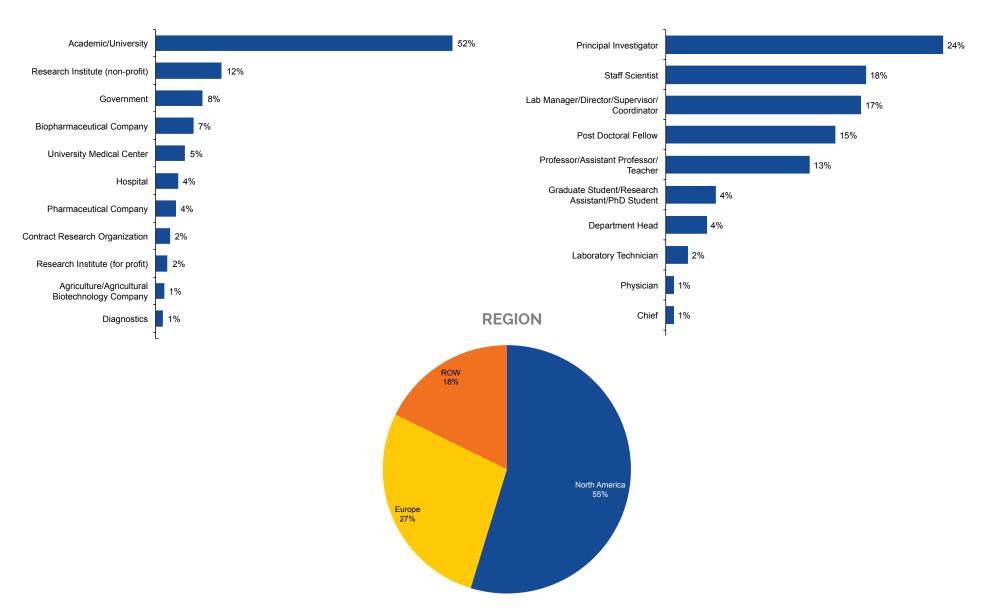




NGS Library Prep Market Scan: Pinpointing Customer Needs and Opportunities for Growth is based on responses to a 60-question online survey for life scientists conducted by BioInformatics LLC (Arlington, Virginia, USA). From October 9-23, 2013, 485 life scientists who currently use NGS in their research participated in the study.











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