LeXome Mini Panel v1.0

Background

Compared with traditional detection technologies for inherited diseases, whole exome sequencing has significant advantages in improving diagnostic accuracy, discovering new types of variations, and conducting deep sequencing. However, whole exome sequencing faces challenges in clinical inherited diseases detection, such as the loss of information in important variant regions due to insufficient coverage depth. Additionally, the vast amount of sequencing data poses challenges for bioinformatics analysis. Therefore, LexigenBio launched the LeXome Mini Panel v1.0, designed specifically for clinical inherited diseases. By focusing on core gene regions, this panel provides a more efficient and cost-effective solution for clinical genetic disease detection.

Introduction

LeXome Mini Panel v1.0 focuses on the exome associated with clinical inherited diseases, with probe coverage spanning a 16.1 Mb genomic region involving 5,650 clinically significant genes and encompassing over 4,000 genetic disorders. In comparison to the whole exome panel, the LeXome Mini Panel can be used to rapidly and efficiently detect pathogenic genetic variations within target genes in the human genome. This not only reduces sequencing costs but also significantly shortens data analysis time.

Feature

- **Highly Targeted:** Focuses on the exome associated with clinical inherited diseases, covering a 16.1 Mb genomic region, involving 5,650 genes related to over 4,000 clinical genetic disorders.
- **High Accuracy:** Based on the probe hybridization capture principle, it can accurately detect genetic variations within target genes, providing reliable data support for subsequent research.
- **High Efficiency:** Compared to the whole exome panel, the LeXome Mini Panel can rapidly detect pathogenic genetic variations within target genes, thereby reducing data analysis time and minimizing turnaround time.
- **Cost-effective:** Aim to only include clinically significant regions specifically related to inherited diseases, effectively reducing sequencing costs.

Performance

Capture Performance

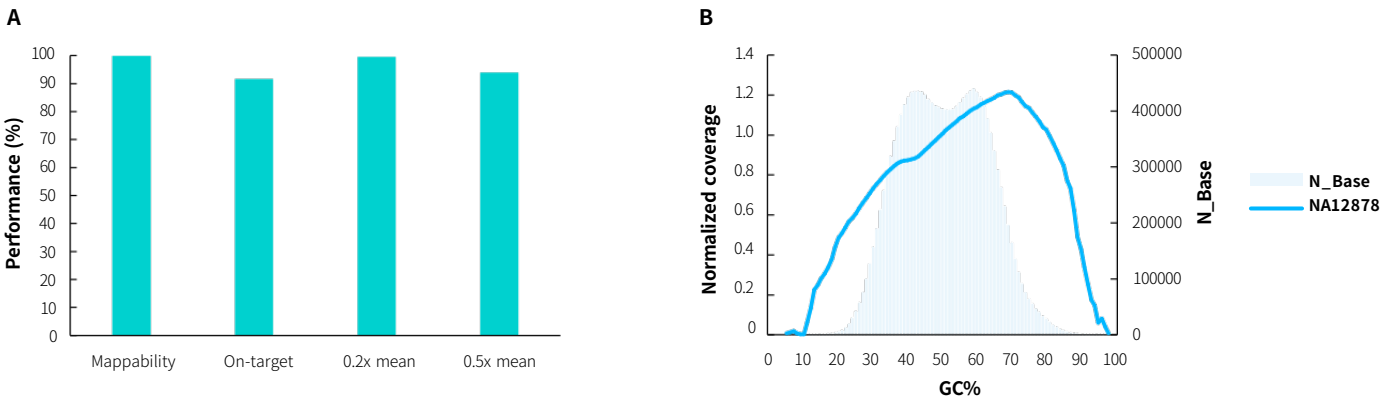


Figure 1. Capture performance of LeXome XP Panel v1.0. Cell Line gDNA Standard (Coriell, NA12878) were used to prepare library with the LeXPrep DNA Library Preparation Kit (for Illumina®). LeXome Mini Panel v1.0 were used to complete hybridization capture. The BWA was used for alignment of raw reads to the reference genome (hg38). **A.** Mappability, On-target rate, and target coverage; **B.** GC Bias.

Note: Sequencing platform: Illumina Novaseq 6000，PE150.

High Confidence Variant Calls

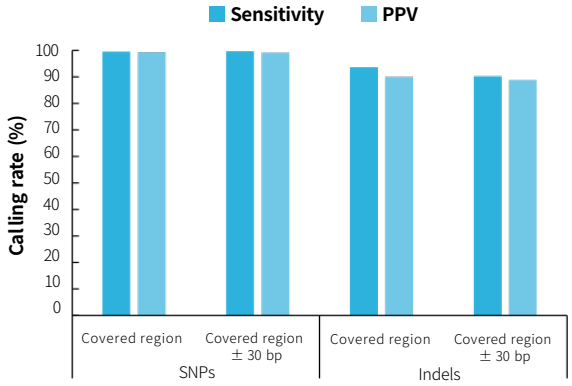
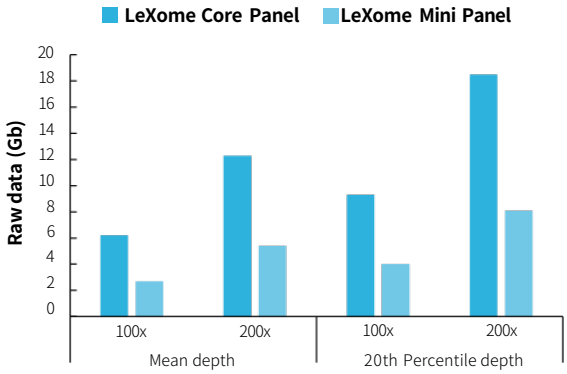


Figure 2. Sensitivity and positive predictive value (PPV) of LeXome Mini Panel for NA12878 mutation identification.

More Efficient and Cost-effective

A



B

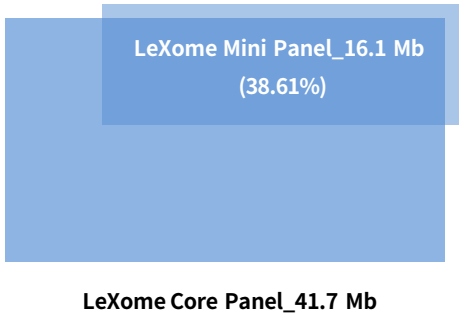


Figure 3. The LeXome Mini Panel reduces sequencing raw data to minimize costs. A. Minimum amount of raw data required for the LeXome Mini Panel and LeXome Core Panel to achieve a specific depth; **B.** Coverage region and relationship between the LeXome Mini Panel and LeXome Core Panel.

Ordering Information

Product	Catalog#
LeXome Mini Panel v1.0, 96 rxn	LX01881
LeXome Mini Panel v1.0, 16 rxn	LX01882

Statement

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