Product Profile

QIAseq™ Targeted DNA Panels

For detecting of low-frequency variants with digital DNA sequencing

QIAseq Targeted DNA Panels deliver:

- Sample to Insight® solutions for unbiased, targeted DNA sequencing
- Digital sequencing that minimizes PCR bias and amplification errors to enhance NGS panel sensitivity
- Unique chemistry that overcomes the challenges of sequencing GC-rich genomic regions
- Compatibility with low yield and poor quality DNA samples
- A single-primer extension approach without the predefined amplicon size constraint

Sequence unique DNA molecules, not PCR duplicates

Targeted DNA sequencing with enrichment panels is a powerful approach to detect low-frequency variants. The main challenge with many of today's targeted DNA sequencing approaches is the generation of errors during amplification steps. Because all DNA fragments look exactly the same, it is impossible to distinguish a unique DNA variant from a library construction error. Errors associated with amplification and sequencing limit the ability of a researcher to confidently call low-frequency DNA variants.

The QIAseq Targeted DNA Panels have been developed to detect low-frequency variants with high confidence by ▷

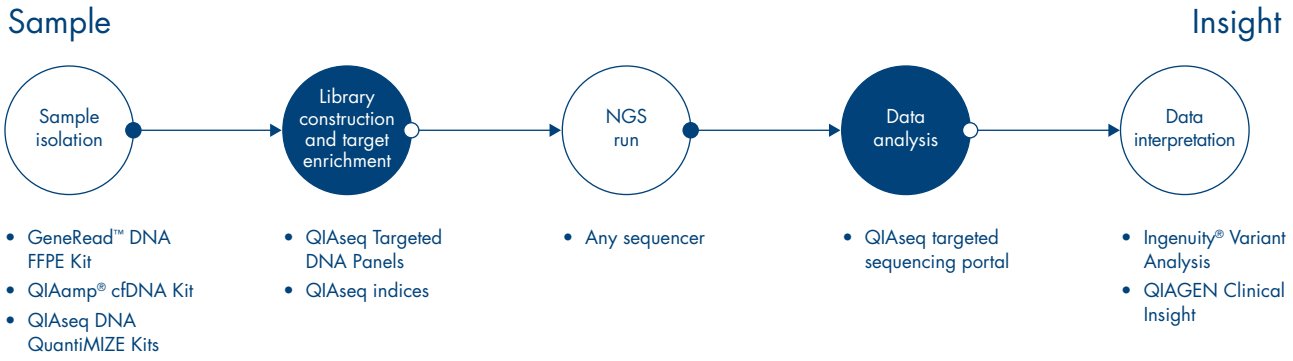
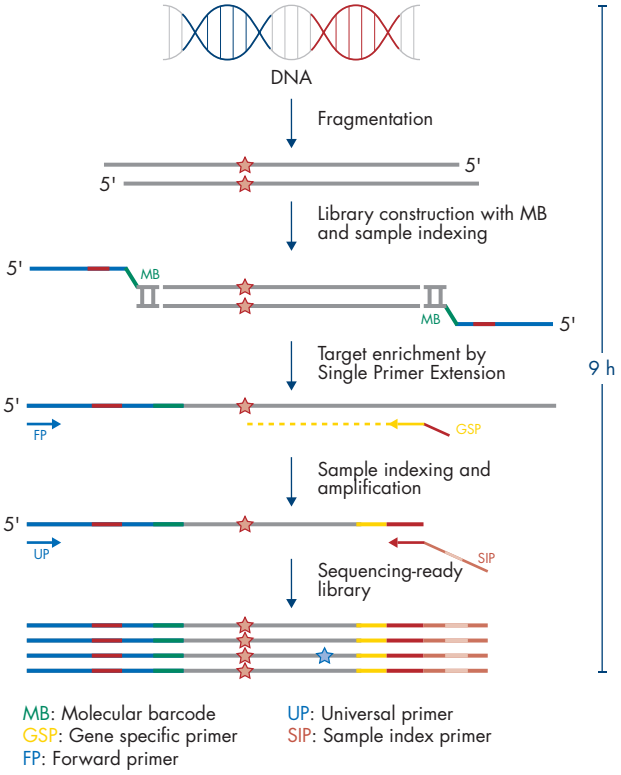


Figure 1. Sample to Insight solutions using the QIAseq Targeted DNA Panels. The flexibility of these panels enables the construction of libraries from DNA isolated from a wide range of samples that are compatible with both Illumina® and Ion Torrent™ platforms. The complementary data analysis portal translates raw data to molecular barcode counts and variants.



overcoming the issues of PCR duplicates, false positives and library bias. This solution is based on the use of unique molecular indices (Figure 2) to deliver a digital sequencing approach. Since each unique DNA molecule is barcoded before any amplification takes place, unique DNA molecules can be distinguished from PCR duplicates or errors – opening the door for you to confidently detect low-frequency DNA variants in your experiments with new levels of statistical accuracy.

Figure 2. Workflow using QIAseq Targeted DNA Panels. Isolated DNA (as low as 20 ng) is enzymatically fragmented to generate small pieces of dsDNA. This step is followed by the library construction step – during which adapters with molecular barcodes and sample indices are incorporated into the unique DNA molecules generated in the previous step. Library fragments now serve as templates for target enrichment using single primer extension. In this step, targets are enriched using a single gene-specific primer and a universal forward primer. The final step is library amplification and sample indexing (for Illumina dual indexing only). After sequencing, molecular barcodes enable the differentiation of true variants (red star) from false positives (blue star) for sensitive variant detection.

Ordering Information

Product	Contents	Cat. no.
QIAseq Targeted DNA Panel (96)	Kit containing all reagents (except indices) for targeted DNA sequencing; fixed panel for 12 or 96 samples; less than 100 genes	331502
QIAseq Targeted DNA Custom Panel (96)	Kit containing all reagents (except indices) for targeted DNA sequencing; custom panel for 96 samples	331505
QIAseq Targeted DNA Booster Panel (96)	Pool of primers used in combination with either cataloged or custom panels	331592
QIAseq Targeted DNA Extended Panel (96)	Kit containing all reagents (except indices) for targeted DNA sequencing; extended panel for 96 samples	331595

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at **www.qiagen.com** or can be requested from QIAGEN Technical Services or your local distributor.