Twist Human RefSeq Panel

Great performance when combined with Twist Human Core Exome

KEY BENEFITS

More Complete Coverage
- Adds 3.6 Mb of content to target all protein coding genes
- Based on recent database releases

Retain Flexibility
- Easily spike-in content into core exome panel
- Effective across single-plex and multiplex target enrichment workflows

Maximize Efficiency
- Ready-to-use formulation
- Reduce per-sample sequencing cost through superior coverage uniformity

Exome sequencing has become a widely used practice both in clinics and diagnostics. The superior performance of Twist Human Core Exome provides the optimal solution for sequencing of protein coding genes. The Twist Human Core Exome however focuses only on the most accurate curated subset—CCDS database. Twist now offers the Twist Human RefSeq Panel, which is designed to expand the content of the Twist Human Core Exome. When combining the two panels, greater than 99% of protein coding genes are covered.

Increase Confidence in Your Variant Detection Experiments

Gene definitions are constantly being updated by dedicated consortia such as GENCODE, based on new information from large scale experiments. Thus, panels based on definitions from even several years ago may be missing a considerable portion of genes, and conversely may include some outdated sequences.

VENDOR	REFSEQ	CCDS20	GENCODE V28
A-1 (hg19)	91.7 %	92.0%	90.8%
A-2 (hg38)	95.4%	100%	99.2%
I-1 (hg19)	98.3%	99.2%	95.9%
Twist Human Core Exome (hg38)	91.8%	99.9%	95.2%
Twist Core Exome + RefSeq Panel (hg38)	99.2%	99.9%	99.8%

Table 1. This compares the coverage of different databases among several commercially available exomes. This is calculated by overlap between target content versus protein coding exons in databases annotated on primary human genome assembly as of May 2019 UCSC genome browser. Twist Human RefSeq Panel, Figure 1, covers >99% of RefSeq, CCDS, and GENCODE databases when combined with Twist Human Core Exome, providing best in class coverage of most up-to-date content.

Maximum Sequence Efficiency and Best Coverage Uniformity

Twist has engineered the Fast Hybridization Solution to provide the excellent performance of its standard protocol in as little as 15 minutes. This quick hybridization is accompanied by a streamlined target enrichment workflow that can be completed in 5–8 hours (including time for library preparation), taking you from sample to sequencer within the same day.

The Fast Hybridization Solution workflow involves a single-tube dry-down and is fully automatable to accommodate high-throughput applications.

Figure 1 and 2 show target coverage and Fold-80 with the Twist Human Core Exome Kit and Core Exome + Twist Human RefSeq Panel compared to comparable kits on the market. As seen in both figures, target coverage (>94%) and Fold-80 (1.34–1.36) are far superior using either the Exome only and the Exome + RefSeq Panel compared to other market equivalent kits.

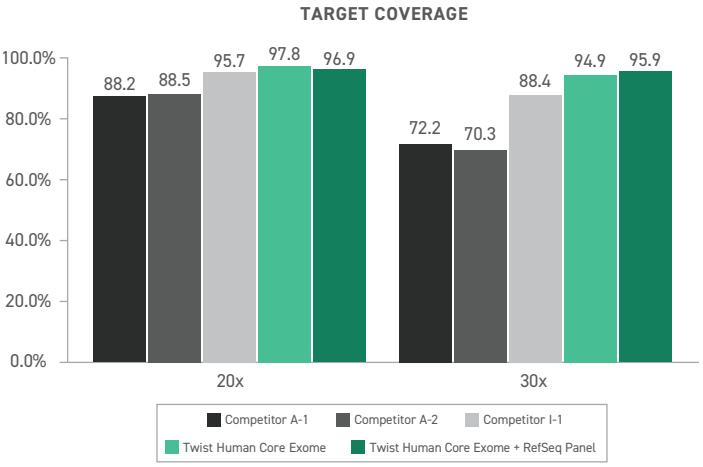

Figure 1. All Samples subsampled to 150x raw sequencing coverage.

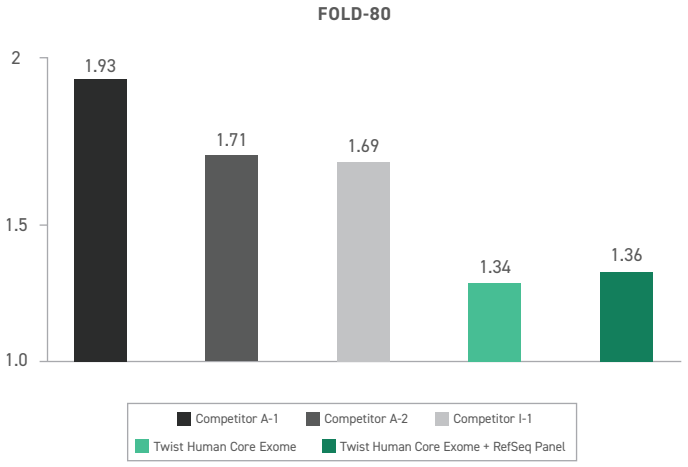

Figure 2. Fold-80 values for various comparable exome kits.

Easy to Add Content Using Twist Target Enrichment

Twist's extended content panels is an example of how Twist Human Core Exome plus Twist Human RefSeq panels allow for coverage of the targets you require.

Figure 3. Twist Human Core Exome Kit allows researchers to add additional content or enrich the current content for specific applications.

Twist Human RefSeq is a component of the Twist Bioscience portfolio of products for NGS Target Enrichment.

LEARN MORE

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ORDERING INFORMATION

102028: Twist Human RefSeq Panel, 2 Reactions, Kit
Panel for 2 enrichment reactions targeting 3.6 Mb of human protein coding regions

102029: Twist Human RefSeq Panel, 12 Reactions, Kit
Panel for 12 enrichment reactions targeting 3.6 Mb of human protein coding regions

102030: Twist Human RefSeq Panel, 96 Reactions, Kit
Panel for 96 enrichment reactions targeting 3.6 Mb of human protein coding regions

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