xGen™ Exome Hyb Panel v2

The best cost-to-benefit ratio for elucidating new biological insights

- A new standard for exome coverage
- Consistent performance over time
- Flexible customization with scalability
- Time and cost savings

The xGen Exome Hyb Panel v2 provides deep and even coverage of the human exome (**Figure 1**). Spanning 34 Mb of the human genome, the xGen Exome Hyb Panel v2 comprises of 415,115 individually synthesized probes that are manufactured to ISO 13485 standards and individually assessed for quality control. By scaling the individual synthesis and quality control of each probe in the xGen Exome Hyb Panel v2, we minimize batch-to-batch variation, providing consistent results while decreasing the need for further sequencing and downstream confirmation (**Figure 2**).

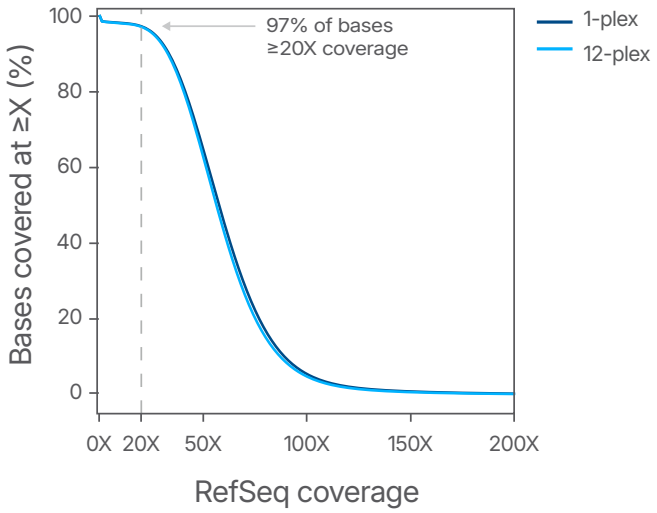

Figure 1. Highly uniform sequence coverage with xGen Exome Hyb Panel v2 leads to lower sequencing costs. DNA libraries were created from 100 ng of human genomic DNA (Coriell) using xGen Stubby Adapter and xGen Unique Dual Index (UDI) Primers with the xGen DNA Library Prep EZ Kit. These libraries were enriched either as 1-plex captures or in a single 12-plex capture using the xGen Exome Hyb Panel v2. The enriched libraries were sequenced (2×100) on a NextSeq™ (Illumina) instrument and subsampled to 5 Gb. The data shows deep, uniform coverage with a flanked on-target rate of 94.7%, mean target coverage of 64.5X, and a duplication rate of 3.3% (calculated with Picard).

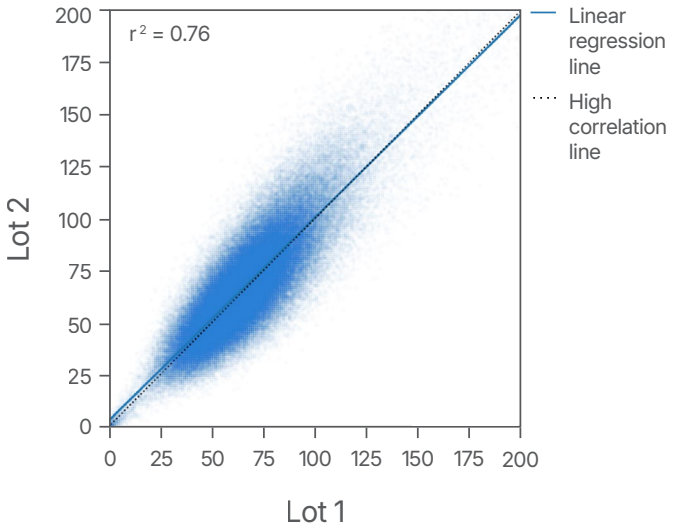

Figure 2. Limit expensive revalidation by having a large, single lot. 100 ng DNA was used to make libraries and were captured in 8-plex. Two different users performed the captures on different days in different locations. The IDT xGen Exome Hyb Panel v2 shows a linear regression line and a high correlation with an r2 value of 0.76.

More complete coverage

The advanced design algorithms used for the xGen Exome Hyb Panel v2, along with the most up-to-date RefSeq definitions result in a more complete coverage of the human exome.

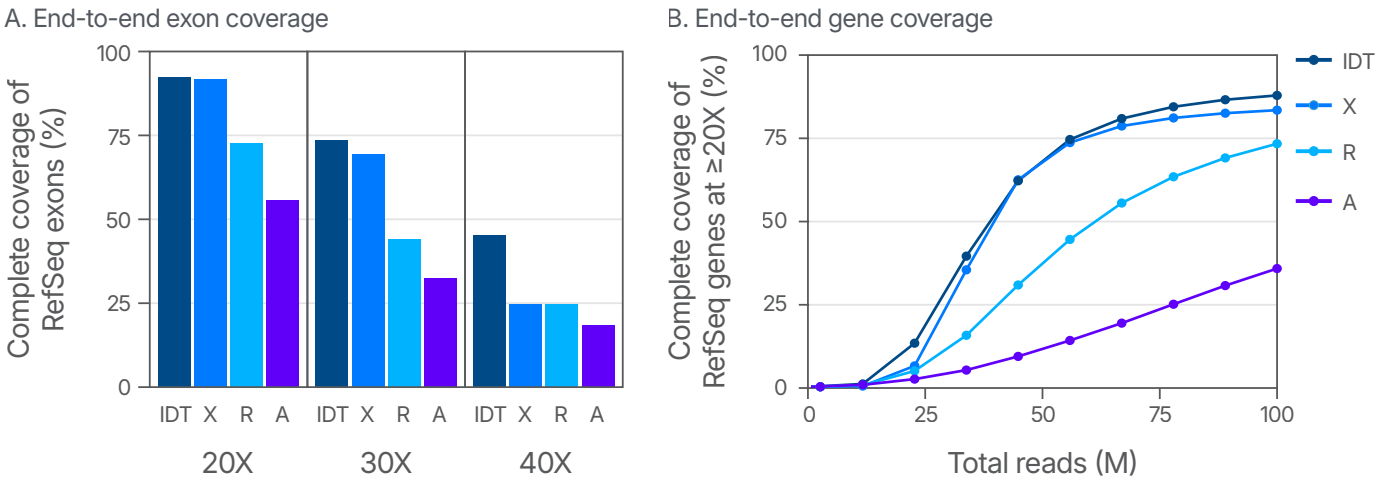

Figure 3. More complete exome coverage is achieved with the xGen Exome Hyb Panel v2. (A) Enriched libraries were sequenced with 5 Gb per sample, and the percent of exons covered end-to-end at each read depth were calculated. The xGen Exome Hyb Panel v2 shows the highest percentage of exons covered at each indicated depth, compared to panels from suppliers X, R, and A. **(B)** Of the 4 panels tested, the xGen Exome Hyb Panel v2 provides the most complete end-to-end gene coverage at ≥20X. Individual samples were subsampled at different read depths (2×100 bp read length). The percentage of genes that were covered for every base of every exon at ≥20X was calculated at each read depth and plotted.

Achieve more efficient sequencing and save costs

The xGen Exome Hyb Panel v2 provides deeper coverage for the same amount of reads, allowing you to reduce sequencing costs.

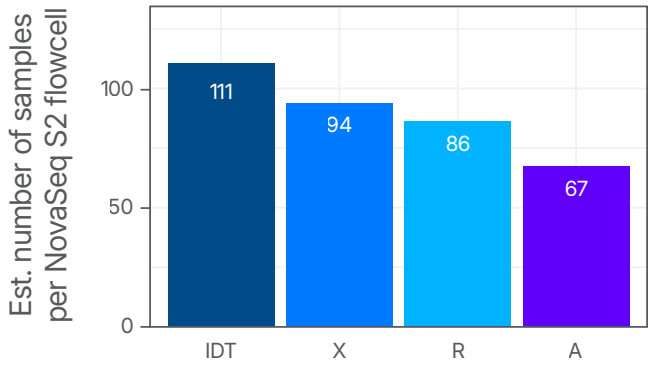

Figure 4. The xGen Exome Hyb Panel v2 may reduce sequencing costs. DNA libraries were created from 100 ng of human genomic DNA (Coriell) using the xGen Stubby Adapter and xGen UDI Primers with the xGen DNA Library Prep EZ Kit. These libraries were enriched either as 8-plex (competitor), or 12-plex (IDT) captures. The enriched libraries were sequenced (2 × 100) on a NextSeq (Illumina) instrument, and the number of reads required to achieve 75X mean target coverage (Picard) per sample was calculated. Then, the number of samples that would fit on a NovaSeq™ S2 flowcell (Illumina) was calculated.

Ordering information

Product	Size	Catalog #
xGen Exome Hyb Panel V2	4 rxn	10005151
	16 rxn	10005152
	96 rxn	10005153

For more information, visit **www.idtdna.com/exome**