

# COMPLETE TARGET ENRICHMENT WORKFLOW

The superior coverage and on-target rates of xGen target capture now with Lotus library preparation.



**Reproducible targeted NGS data**  
with quick and easy workflow



**Simple library prep workflow**  
paired with the adapters that suit  
your application



**Consistent results** with individually  
synthesized and quality-controlled  
target capture probes

Hybrid capture-based target enrichment empowers researchers to reveal variations in the genome with a higher level of sample multiplexing compared to whole genome sequencing. IDT offers a complete target enrichment workflow (Figure 1) starting with the **Lotus DNA Library Prep Kit**. The Lotus kit features enzymatic fragmentation to streamline genomic DNA library preparation and generates complex, high-quality libraries. The Lotus kit can be paired with many **adapter and indexing solutions** from IDT, including those featuring unique dual sample indexes to prevent read misassignment resulting from index hopping. Finally, sequencing libraries are used as the starting material to perform hybridization capture with stocked or custom **xGen Lockdown Panels**.

## Genomic DNA

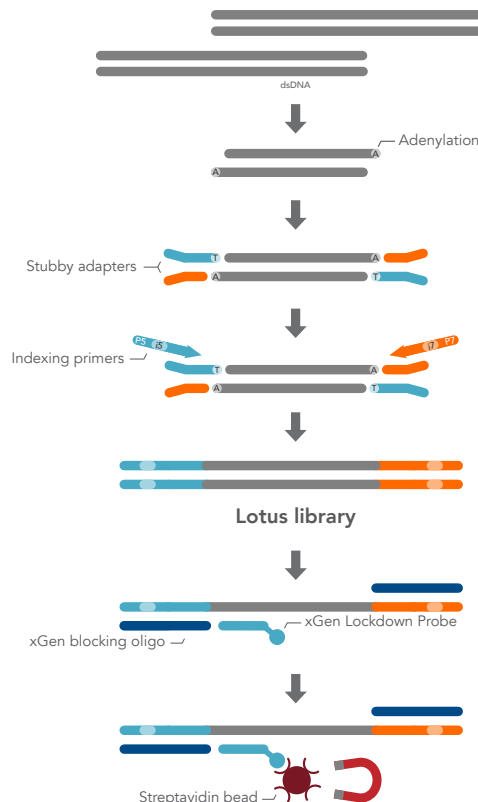
## Library prep

Enzymatic prep

## Ligation

## PCR

## Hybrid capture

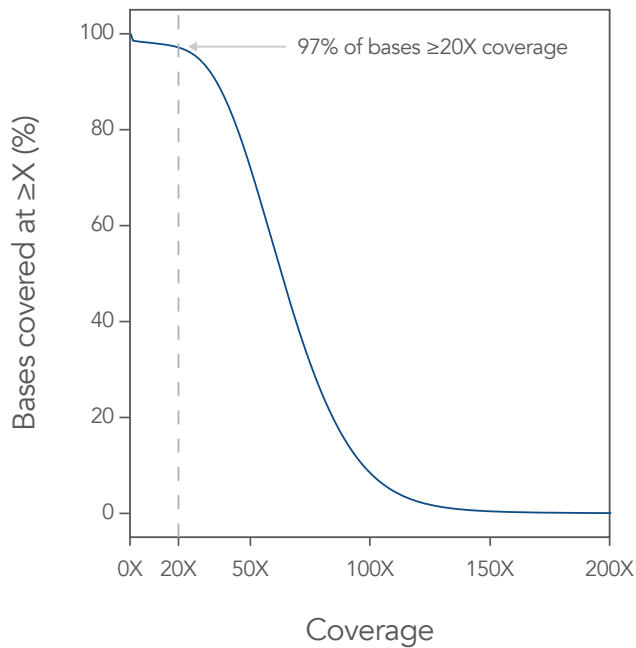


**Figure 1. The complete target enrichment workflow.** Our easy enzymatic library prep method takes you from sample to sequencing while eliminating the need for acoustic shearing methods that require instrumentation and extra time. The **xGen Hybridization and Wash Kit** works with **xGen Lockdown Probe Pools and Panels** and **xGen Blocking Oligos** for a complete, high-quality target enrichment solution.

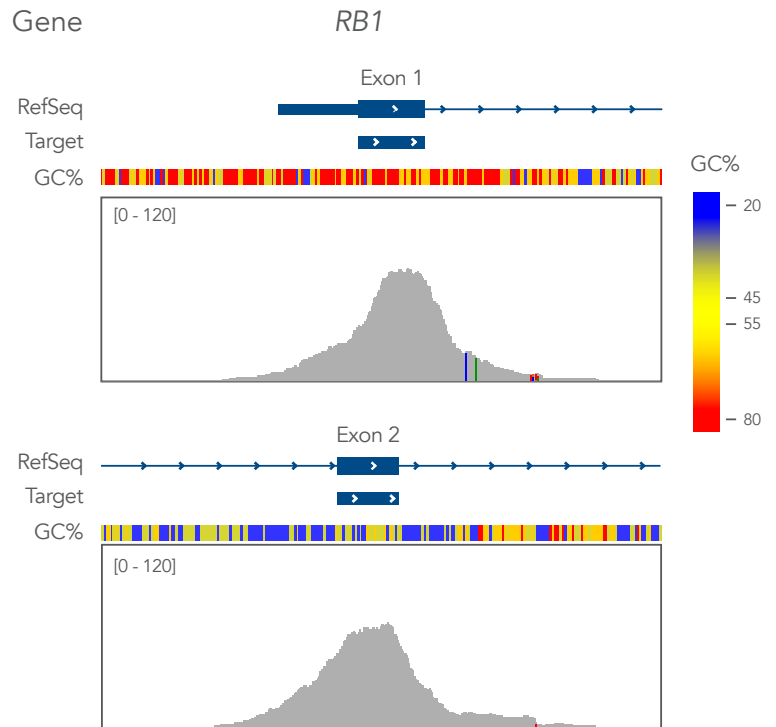
> [WWW.IDTDNA.COM](http://WWW.IDTDNA.COM)

xGen Lockdown Panels consist of individually synthesized, and quality-controlled xGen Lockdown Probes. Mass spectrometry and OD measurements are taken for each probe to ensure appropriate representation of the correctly manufactured probes in the pool. This delivers high on-target rates and deep, uniform coverage even across difficult GC-rich regions (Figure 2). IDT provides both custom and stocked panels, including the **xGen Exome Research Panel v2**. This panel spans a 34 Mb target region (19,433 genes) of the human genome and covers 38 Mb of variable tiled probe space. .

A. Deep, uniform coverage using Lotus kit and xGen Exome Research Panel v2



B. Coverage of *RB1*



**Figure 2. Highly uniform sequence coverage with xGen Exome Research Panel v2 leads to lower sequencing costs.** (A) 12 Lotus DNA libraries were created from 100 ng of human genomic DNA (Coriell) using xGen Stubby Adapter and Unique Dual Index Primer Pairs and were enriched in a single 12-plex capture using the xGen Exome Research Panel v2. The enriched libraries were sequenced (2 x 100) on a NextSeq® instrument (Illumina) and subsampled to 5 Gb. The data shows the mean coverage for the 12 libraries and indicates 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). (B) Exons 1 and 2 of *RB1* show uniform, complete coverage on the Integrative Genomics Viewer. *RB1* exons 1 and 2 show extremes of GC content with ~76% in exon 1 and ~38% in exon 2.

## ORDERING INFORMATION

Product	Size	Catalog #
Lotus DNA Library Prep Kit	16 rxn	10001073
	96 rxn	10001074
IDT adapters	Varies	<a href="http://www.idtdna.com/Custom-NGS-Adapters">www.idtdna.com/Custom-NGS-Adapters</a>
	4 rxn	10005151
xGen Exome Research Panel v2	16 rxn	10005152
	96 rxn	10005153
IDT hybridizationcapture probes and reagents	Varies	<a href="http://www.idtdna.com/xGen">www.idtdna.com/xGen</a>

> FOR MORE INFORMATION, VISIT [WWW.IDTDNA.COM/NGS](http://WWW.IDTDNA.COM/NGS).

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