

UNLOCK YOUR FFPE SAMPLES

Superior yield and coverage for low-input and degraded samples



Quality data
from even the most degraded samples



Higher conversion rate
compared to TA-ligation-based methods



End-to-end solution
for FFPE samples

Prepare high-quality next generation sequencing (NGS) libraries from your precious yet degraded samples with the xGen Prism DNA Library Prep Kit and enrich with xGen hybridization capture reagents for superb results (Figure 1). The kit is uniquely optimized for low-input quantities and degraded samples to efficiently convert challenging samples, such as formalin-fixed, paraffin-embedded (FFPE) or cell-free DNA (cfDNA) samples, into sequencing libraries. Complete the workflow with a completely customizable high-quality hybridization capture solution.

Fragmented input DNA

End repair

input DNA blunting

Ligation 1

single-stranded ligation of Ligation 1 Adapter to 3' ends of insert

Ligation 2

Ligation 2 Adapter primes gap filling across the UMI followed by 5' ligation

PCR amplification

amplification with xGen Unique Dual Index (UDI) Primer Pairs

Hybrid capture

Blocking oligos addition targets hybridization to capture probes

incubation with magnetic streptavidin beads and isolation of targets with a magnet

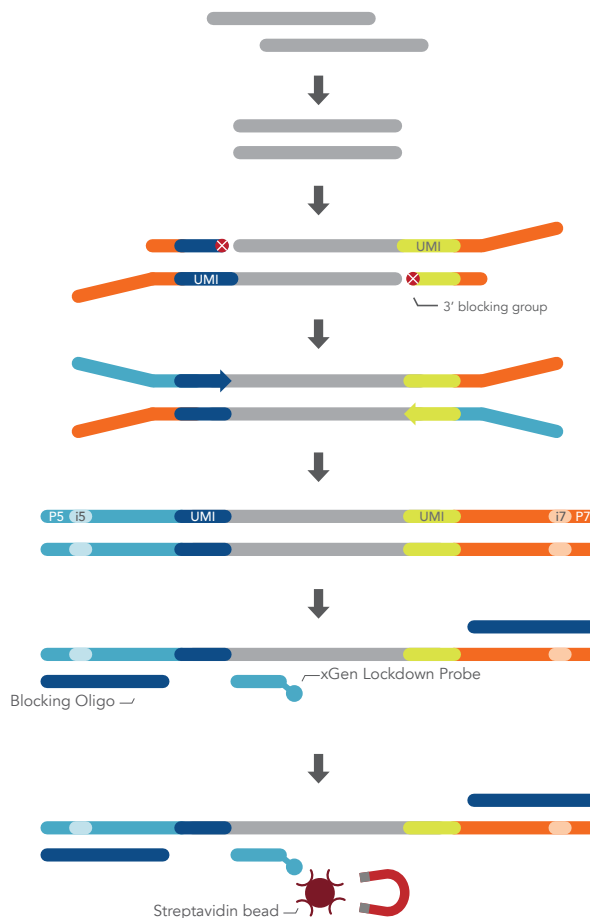


Figure 1. The complete target enrichment workflow. The xGen Prism DNA Library Prep Kits' workflow features a proprietary single-stranded ligation strategy and novel mutant ligase that maximizes conversion, virtually eliminates adapter-dimer formation, and reduces chimera rates. Adapter dimer formation is negligible, so a fixed concentration of adapter can be used, and aggressive size selection is no longer required for post-ligation clean-up. Sequencing libraries are used as starting material to perform enrichment using the xGen Hybridization and Wash Kit, xGen Blocking Oligos, and xGen probes for a completely customizable high-quality hybridization capture solution.

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THE xGEN WORKFLOW PROVIDES THE HIGHEST QUALITY SEQUENCING

The xGen Prism DNA Library Prep Kit was compared to library prep kits designed for low input and FFPE samples from two other vendors. The libraries from these kits were combined with a custom xGen hybridization capture panel which reveal better yield and sample conversion from the xGen Prism Kit (Figure 2). When used in conjunction with the xGen Exome Research Panel v2, the xGen Prism DNA Library Prep Kit enabled deep sequencing coverage of the human exome from low-quality FFPE samples (Figure 3).

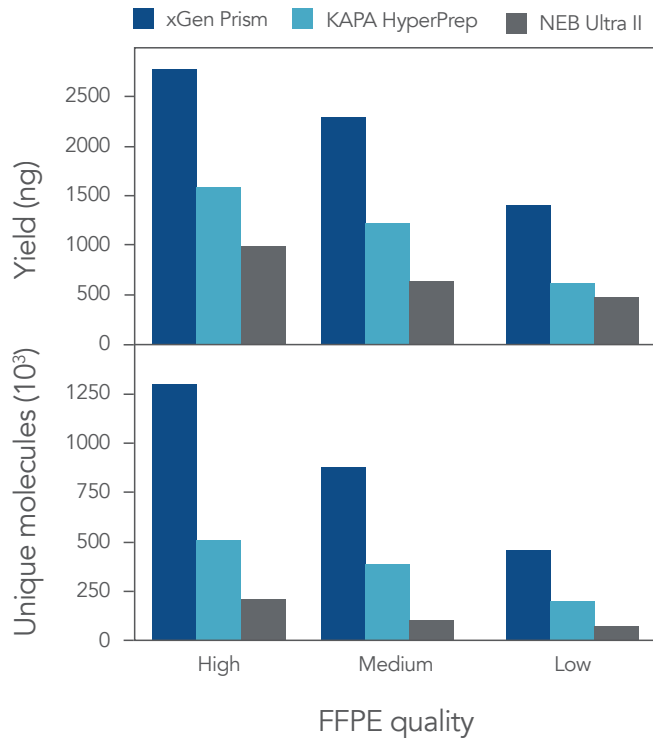


Figure 2. Higher library yield and complexity from FFPE samples. Libraries were generated from 25 ng of Horizon FFPE reference standards with varying qualities, captured with a custom 61 kb xGen hybridization capture panel, and sequenced on an Illumina NextSeq[®] 500 instrument. Reads were mapped using BWA (0.7.15), and the number of unique molecules (HS library size) were calculated using Picard (2.18.9) after subsampling to the same number of reads.

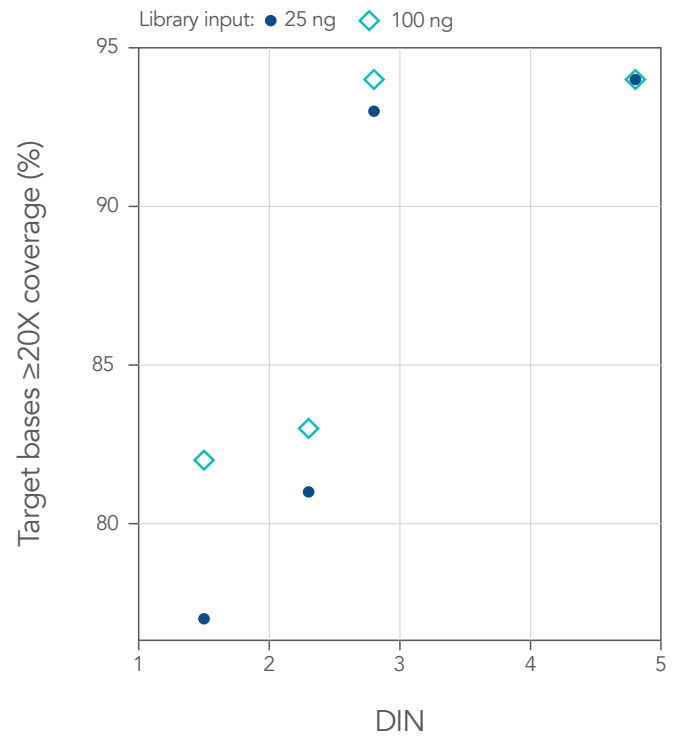


Figure 3. Deep exome data from low-quality FFPE samples. The xGen Prism DNA Library Prep Kit was used for library construction with 25 and 100 ng of medium and low-quality FFPE samples as determined by the DNA integrity number (DIN). Libraries were captured with the xGen Exome Research Panel v2 and sequenced on an Illumina NextSeq 500. Sequencing results were subsampled to 3.75 Gb.

ORDERING INFORMATION

Product	Size	Catalog #
xGen Prism DNA Library Prep Kit	16 rxn	10006202
	96 rxn	10006203
xGen UDI Primer Pairs, Index 1–16	16 rxn	10005975
	96 rxn	10005922
xGen Exome Research Panel v2	4 rxn	10005151
	16 rxn	10005152
	96 rxn	10005153
IDT hybridization capture probes and reagents	Varies	www.idtdna.com/xGen

> FOR MORE INFORMATION, VISIT WWW.IDTDNA.COM/NGS.

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