Lotus DNA Library Prep Kit

One kit. Flexible workflow. Endless applications.

The Lotus DNA Library Prep Kit enables streamlined preparation of high-quality next generation sequencing (NGS) libraries from double-stranded DNA. The kit uses enzymatic fragmentation to generate libraries suitable for PCR-free, PCR-amplified, and targeted sequencing applications on Illumina platforms.

The kit combines a single-tube reaction for fragmentation, end repair, and dA tailing with ligation and bead-based purification steps, thereby reducing sample handling and overall library preparation time to approximately 2 hours (Figure 1). This kit is also compatible with a range of DNA inputs (1–250 ng) with low bias for uniform sequence coverage (Figure 2).

This modular kit allows you to customize your library for your application. For example:

- Fragment size—incubation times are used to control fragmentation size
- Adapters and indexing strategy—ligation is used to attach P5 and P7 adapters (not included in kit) using standard TA-library construction. Customize with full-length or stubby adapters, and use any sample indexing strategy you choose.
- Flexible workflow—PCR is optional, depending on your adapter or sample input requirements.
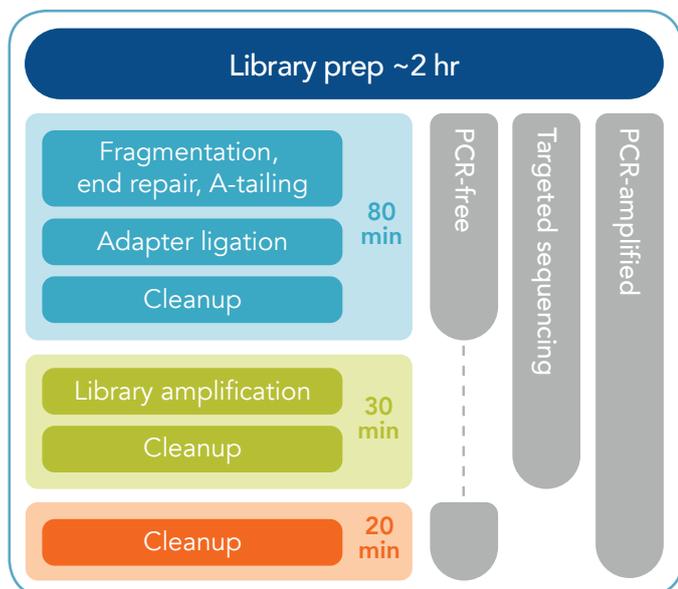
benefits

Get the uniform sample coverage you need without relying on expensive equipment

Regain valuable time with a fast, simple workflow

Create application-specific NGS libraries by adding IDT adapters and xGen products for target capture

Discover more at
www.idtdna.com/Lotus

Figure 1. Lotus DNA Library Prep workflow. Our easy enzymatic method takes you from sample to sequencing while eliminating the need for acoustic shearing methods that require instrumentation and extra time.
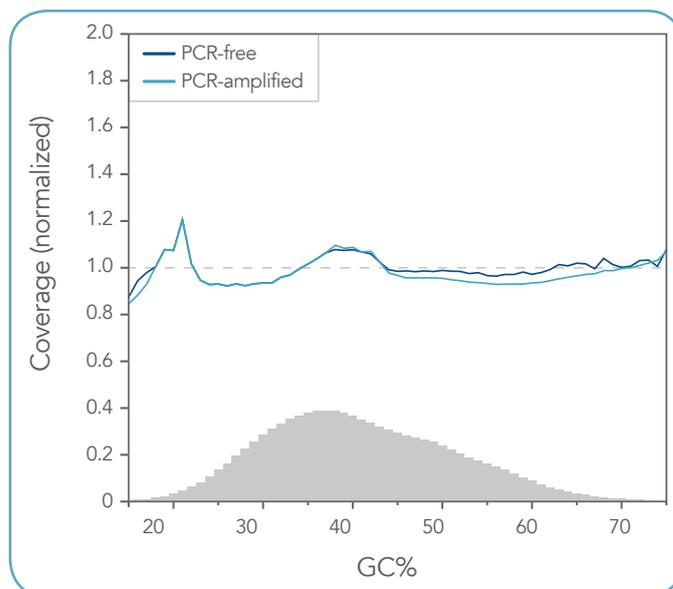

Figure 2. Uniform GC coverage and low bias from PCR-free and PCR-amplified libraries. Shown are normalized coverage of each Lotus library (dark and light blue lines), the expected normalized coverage of 1.0 (dotted line), and the number of 100 bp windows at each GC% (histogram).

INTEGRATED DNA TECHNOLOGIES

custom oligos • qPCR • next generation sequencing • RNAi • genes & gene fragments • CRISPR genome editing

Superior performance in applications such as metagenomics and targeted sequencing

The Lotus DNA Library Prep Kit is well-suited for a wide variety of applications. When tested with metagenomic samples, representation of an artificial microbial community was consistent across a range of inputs (Figure 3). IDT adapters and xGen Lockdown Probes and Panels are manufactured using stringent, proprietary methods that are critical for producing high-quality oligonucleotides for NGS applications. When these adapters and hybridization capture probes are used with the Lotus Kit for targeted sequencing, results show consistent, highly uniform, sequence coverage (Figure 4).
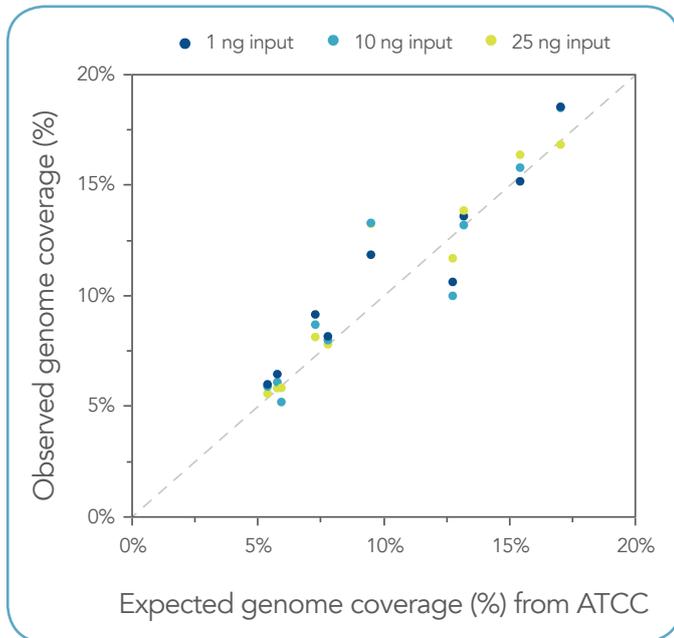

Figure 3. Variability in GC content, size of genomes, and input amount do not influence results in a metagenomics analysis. Libraries were prepared using the Lotus kit, MSA-1000™ microbiome standard (ATCC, an artificial microbial community of 10 strains; input amounts were 1, 10, and 25 ng), full-length adapters, and PCR amplification with P5 and P7 primers.
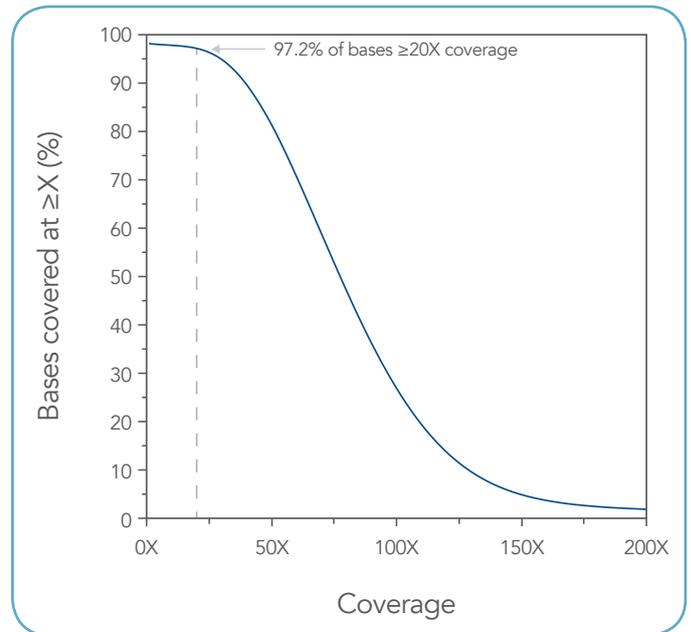

Figure 4. Highly uniform sequence coverage with xGen Exome Research Panel leads to lower sequencing costs. A Lotus DNA library was created from human genomic DNA (NA12878, Coriell; 100 ng) using stubby adapters and was enriched using the xGen Exome Research Panel. Enriched libraries were sequenced on a NextSeq® instrument (Illumina). Using 50M reads per library, the data show deep, uniform coverage with a flanked on-target rate of 90.2% and duplication rate of 5.3% (calculated with Picard).

Ordering information

Product	Size	Category
Lotus DNA Library Prep Kit	16 rxn	10001073
	96 rxn	10001074
(Recommended) IDT adapters	Varies	**www.idtdna.com/NGS-adapters**
(Optional) IDT hybridization capture probes and reagents	Varies	**www.idtdna.com/xGen**

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

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