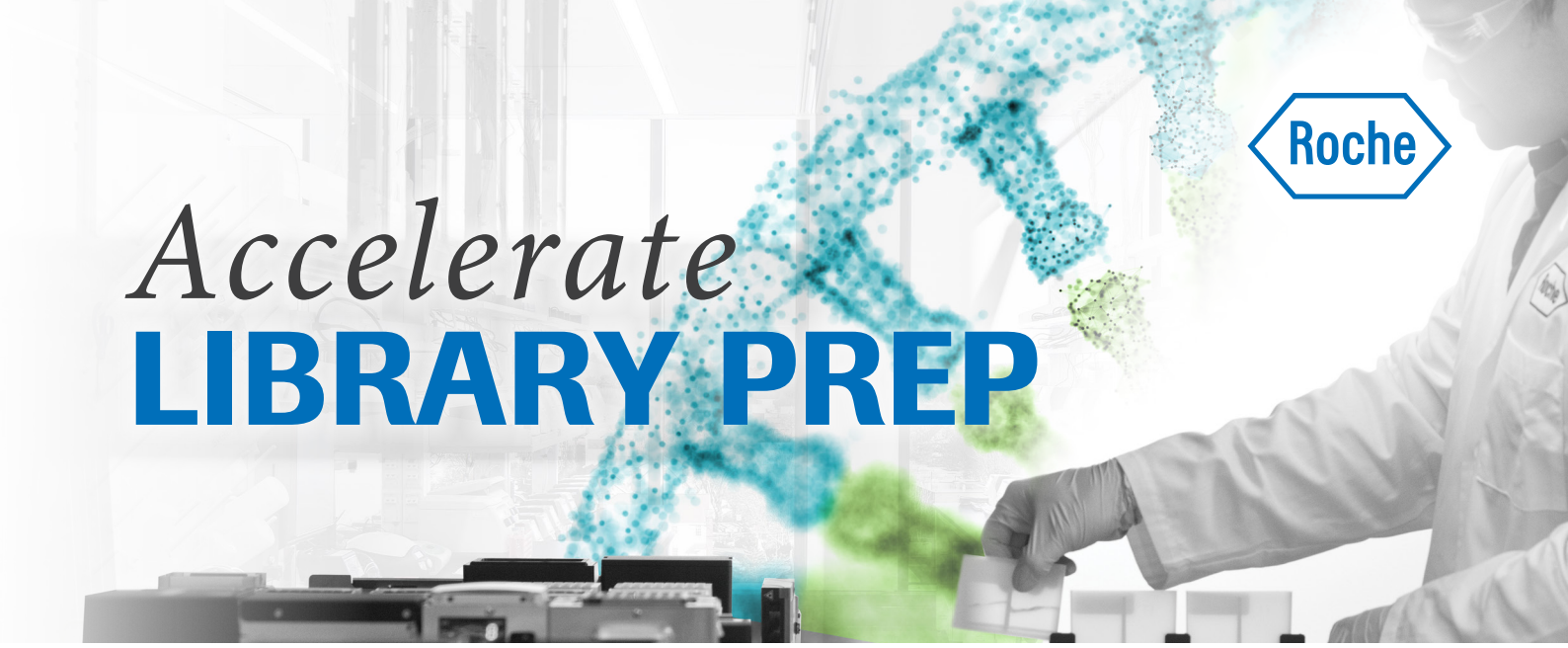

Accelerate LIBRARY PREP

KAPA HyperPrep Kits. Shift your workflow into hyperdrive.

The KAPA HyperPrep Kit provides a streamlined, versatile library preparation solution that significantly reduces library preparation time. The novel, single-tube chemistry offers improvements to library construction efficiency, particularly for challenging samples such as FFPE and cell-free DNA.

KAPA HyperPrep Kits offer a complete library preparation solution with KAPA Adapters and KAPA HyperPure Beads (sold separately). Validated with the KAPA HyperCap and KAPA HyperPETE workflows.

Benefits of the KAPA HyperPrep Workflow

Exceptional performance and sequencing results

- Superior speed and convenience
- Lower duplication rates and higher sequencing coverage

Improved library yields and quality

- Improved performance with low-input samples
- High-quality library construction from FFPE samples

Automation friendly

- PCR-free
- Qualified automation methods

Superior speed and convenience

The streamlined, one-tube KAPA HyperPrep protocol offers rapid turnaround times with minimal hands-on time.

- Complete library construction in less than 3 hours
- Library amplification may be omitted for PCR-free workflows
- Bead-based size selection steps can be incorporated to achieve the appropriate final library fragment-size distribution

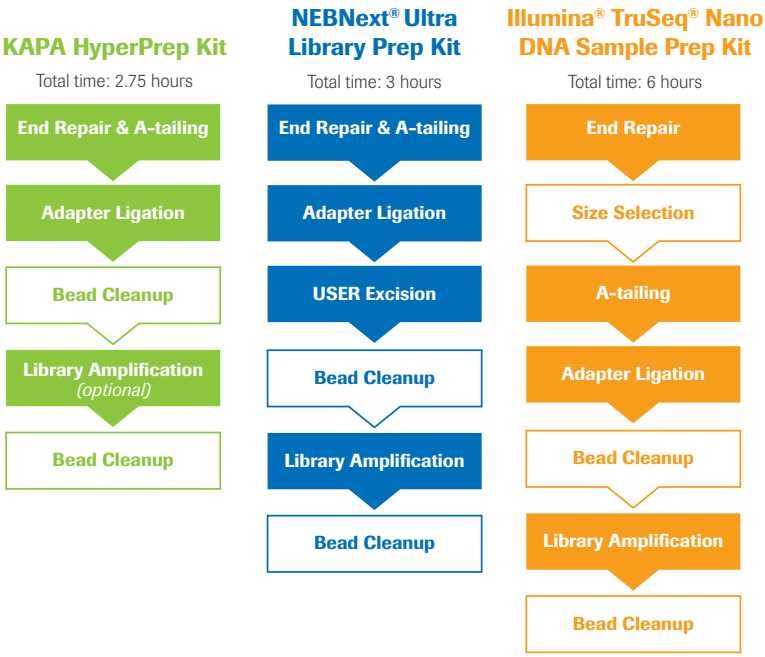

Figure 1. KAPA HyperPrep Kits offer a streamlined library preparation protocol that combines several enzymatic steps and eliminates bead cleanups to significantly reduce library preparation time and improve consistency.

Industry-leading yields and sequencing quality

Conversion rate, defined as % input DNA converted to sequenceable, adapter-ligated library, is a key library construction metric which ultimately determines library diversity and quality.

- Achieve higher library yields across a range of input DNA and sample types
- Fewer amplification cycles for downstream processing result in lower duplication rates and higher sequence coverage
- Achieve successful library construction with challenging samples and PCR-free workflows

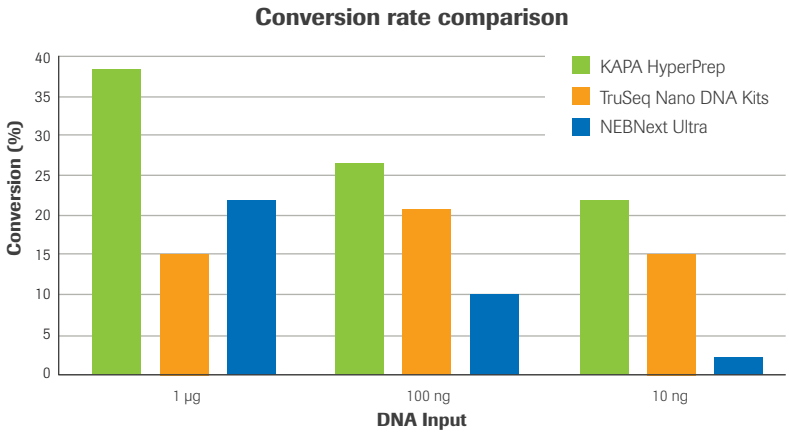

Figure 2. Conversion rates for libraries prepared for target capture from different amounts of Covaris-sheared DNA, using the KAPA HyperPrep or competitor library construction kits. Libraries were prepared according to manufacturer's instructions. Input DNA was quantified by Qubit®, whereas the qPCR-based KAPA Library Quantification Kit was used to determine KAPA HyperPrep and TruSeq Nano library yields after adapter ligation. Conversion rates for NEBNext libraries cannot be measured directly using the KAPA Library Quantification Kit and were derived from post-amplification yields.

Data on file.

Minimal amplification bias

- In workflows where amplification is required, KAPA HiFi introduces minimal amplification bias, resulting in more uniform sequence coverage
- Kits without an amplification module are available for PCR-free workflows

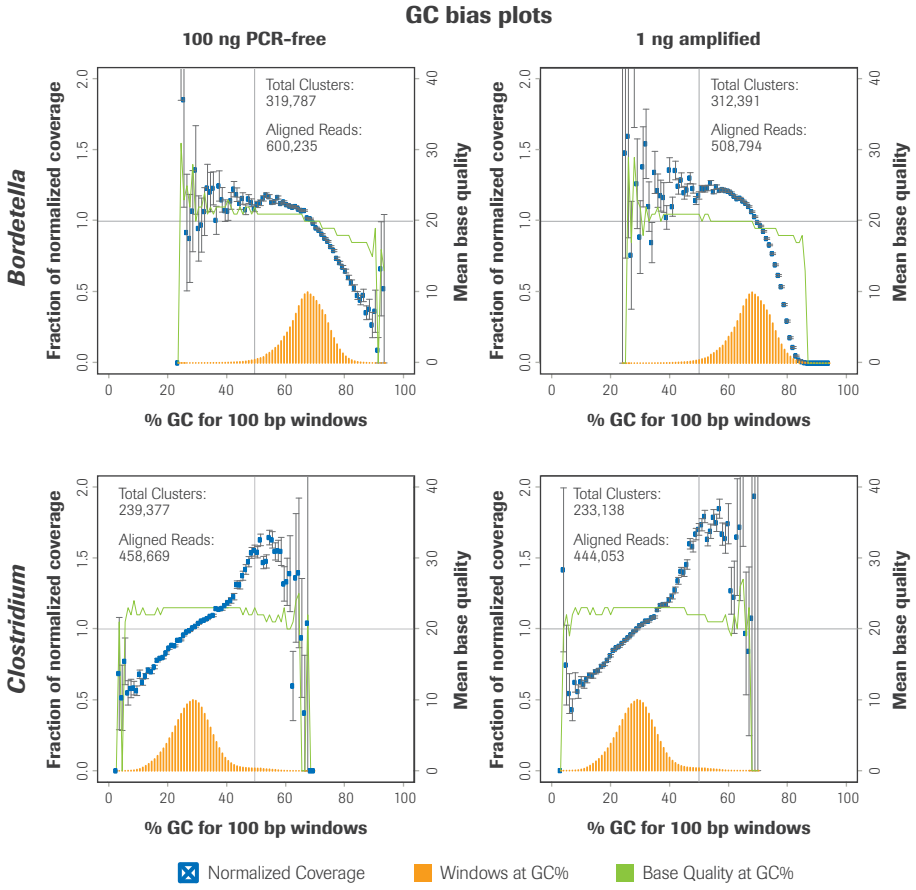

Figure 3. GC bias plots for libraries prepared for whole-genome shotgun sequencing of bacteria with extreme genomic GC content. Libraries were prepared with the KAPA HyperPrep Kit from 100 ng or 1 ng DNA, Covaris-sheared to an average size of ~200 bp, and sequenced without amplification, or after amplification with KAPA HiFi HotStart Library Amplification Kit. Sequencing (2 x 300 bp) was performed on an Illumina® MiSeq® instrument and data analyzed using Picard.

High-quality library construction from FFPE samples

- Lower duplication rates and high sequence coverage enables improved detection of low-frequency mutations
- More unique adapter-ligated library fragments from low-quality sample types translate to higher library diversity

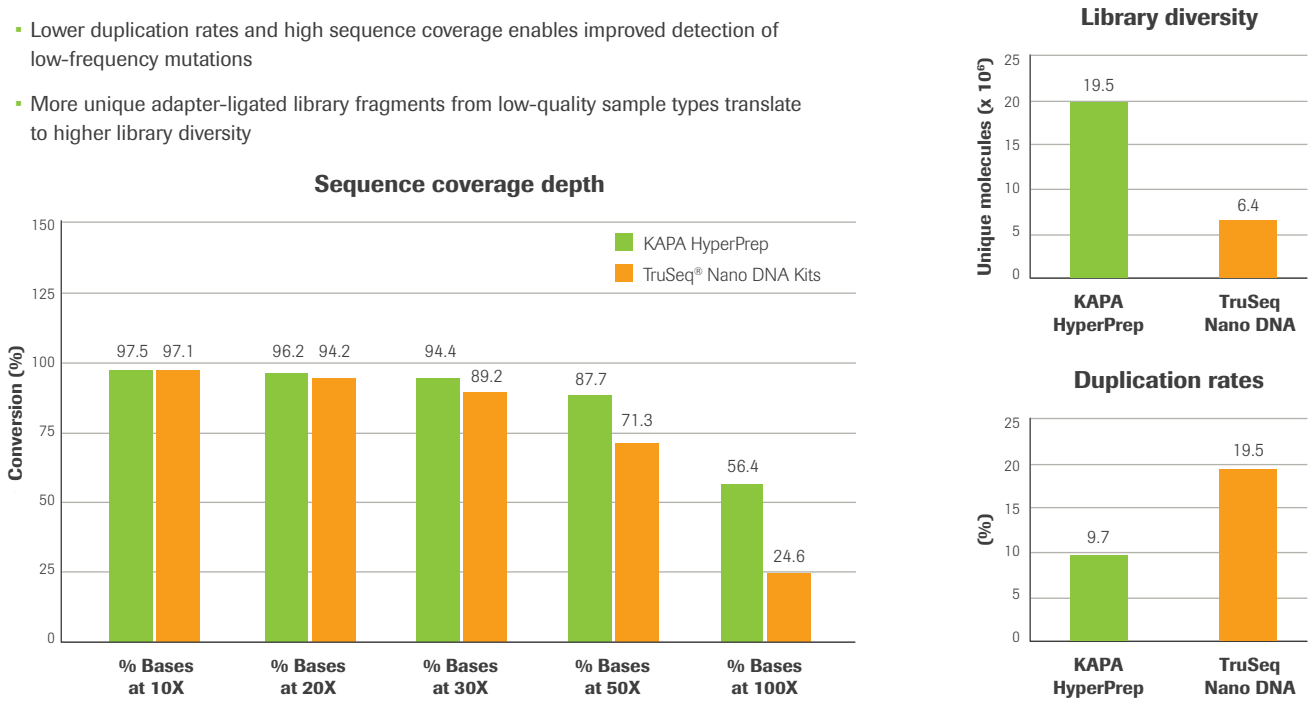

Figure 4. Sequencing metrics for libraries prepared from 100 ng FFPE DNA for target capture, using either the KAPA HyperPrep Kit or TruSeq Nano DNA Sample Prep Kit (Illumina). Captures were performed with the SeqCap EZ Comprehensive Cancer Design (4 Mb) according to the manufacturer's instructions, with the exception that the number of pre-capture amplification cycles for each library type was optimized based on post-ligation yields (10 cycles for KAPA HyperPrep vs. 14 cycles for TruSeq Nano DNA libraries). All libraries were amplified for 13 cycles after capture. Sequencing (2 x 75 bp) was performed on an Illumina HiSeq® instrument. Sequencing reads were down-sampled to ~14 million per library prior to analysis with Picard.

Data on file.

Improved performance with low-input samples

- Generate more diverse libraries from limited amounts of input DNA
- High adapter:insert molar ratios can be used to increase library construction efficiency

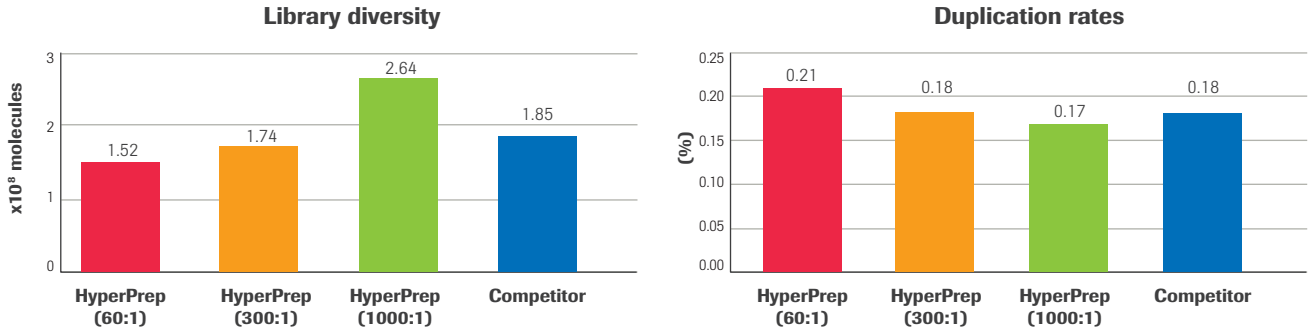

Figure 5. Library diversity and duplication rates for libraries prepared from 2 ng of cell-free DNA. Libraries were constructed with the KAPA HyperPrep Kit or a competitor kit optimized for low-input library construction, according to manufacturer's instructions. Standard ligation parameters were used. KAPA HyperPrep libraries were prepared with a range of adapter:insert molar ratios. Sequencing (2 x 150 bp) was performed on an Illumina® MiSeq® instrument and data analyzed using Picard.

Ordering information

Roche cat. no.	KAPA code	Description	Pack size
07962312001	KK8500	KAPA HyperPrep Kit with Library Amplification	8 reactions
07962347001	KK8502	KAPA HyperPrep Kit with Library Amplification	24 reactions
07962363001	KK8504	KAPA HyperPrep Kit with Library Amplification	96 reactions
07962339001	KK8501	KAPA HyperPrep Kit, PCR-free	8 reactions
07962355001	KK8503	KAPA HyperPrep Kit, PCR-free	24 reactions
07962371001	KK8505	KAPA HyperPrep Kit, PCR-free	96 reactions

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