

# Ignite better insights

# sparQ NGS Product Guide

- Streamlined workflows
- Higher yields
- Superior coverage



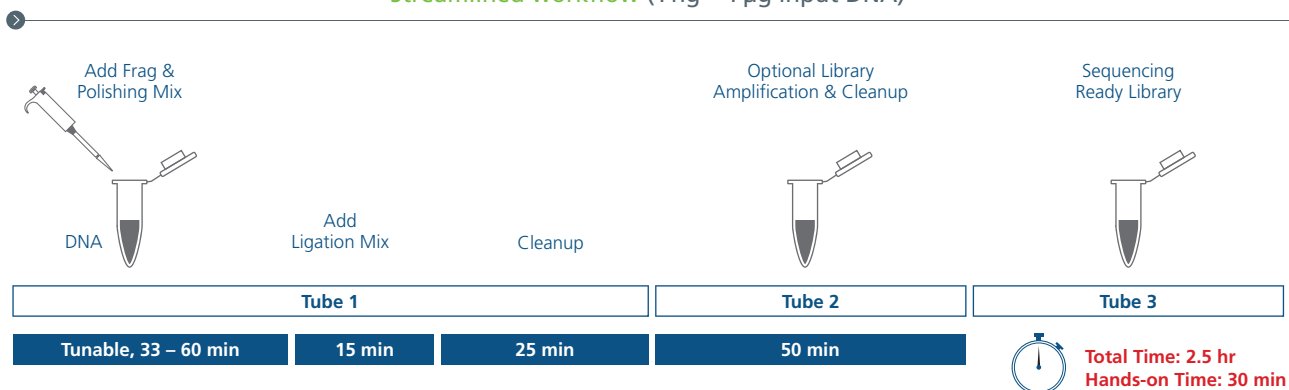
## sparQ DNA Frag & Library Prep Kit

Integrated enzymatic fragmentation and library prep with unrivaled speed and performance

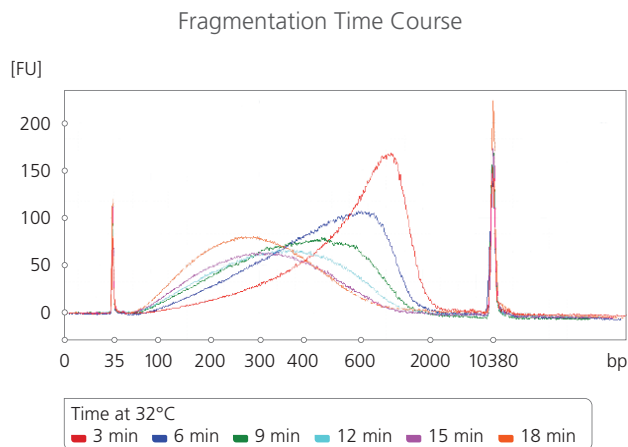
### FEATURES AND BENEFITS:

- High quality libraries in 2.5 hours from 1 ng – 1 µg of input DNA
- Tunable and reproducible fragmentation size range
- Simple, convenient 2-step workflow with minimal hands-on time
- Novel chemistry and high-fidelity amplification minimizing bias
- Superior sequence coverage uniformity and lower duplication rate

### Streamlined workflow (1 ng – 1 µg input DNA)

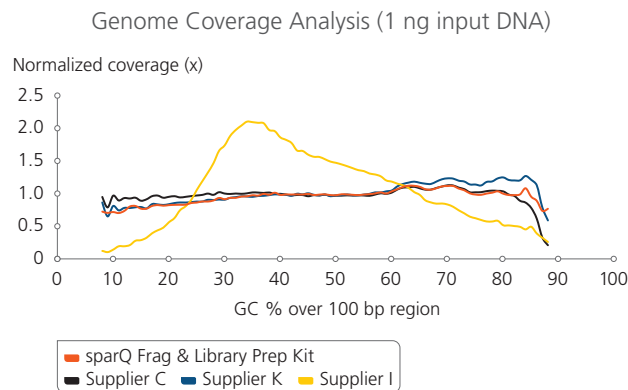


### Tunable & reproducible fragmentation



**Figure 1** sparQ DNA Frag & Library Prep Kit is tunable to the desired fragment size. 100 ng Human gDNA was subjected to fragmentation with a series of incubation time points (3 – 18 min). After fragmentation, DNA samples were purified and then visualized using Agilent High Sensitivity DNA Kit.

### Maximize coverage uniformity



**Figure 2** Library prepared using sparQ DNA Frag & Library Prep Kit resulted in uniform coverage across a wide range of GC-content. Libraries were prepared using different DNA fragmentation and library preparation kits with 1 ng of microbial genomic DNA followed by sequencing on Illumina MiSeq.

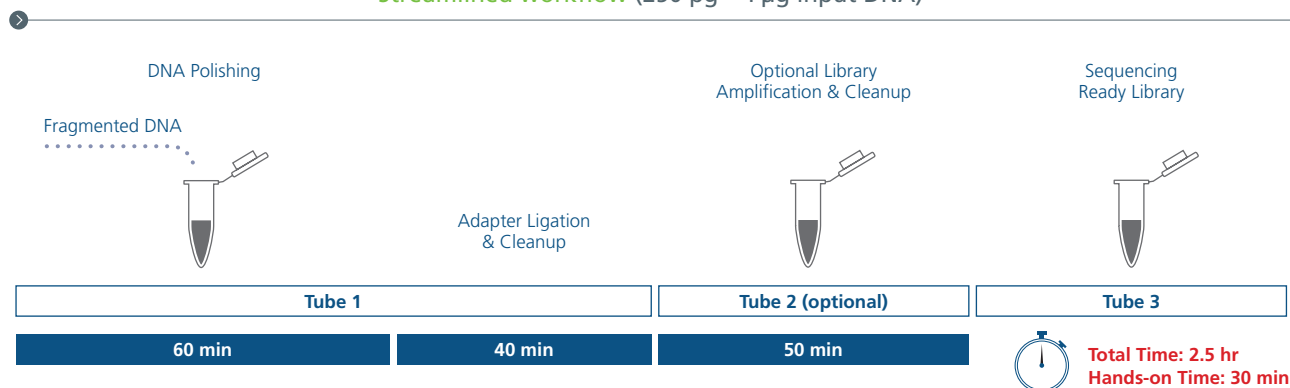
## sparQ DNA Library Prep Kit

Streamlined, versatile single-tube solution for high quality library prep

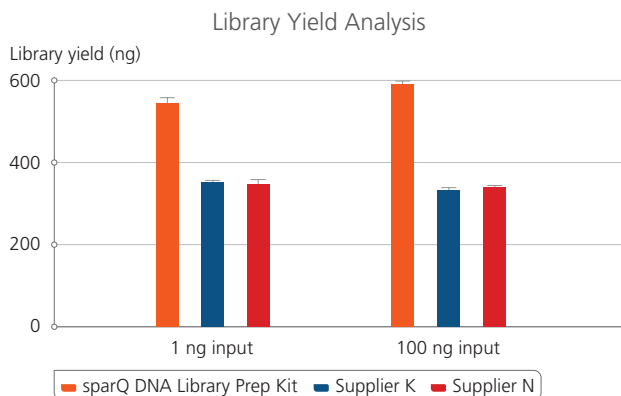
### FEATURES AND BENEFITS:

- Fast, easy single-tube solution completes library prep in 2.5 hours
- Suitable for a wide range of input amounts from as low as 250 pg
- Optimized chemistry ensuring superior library prep sensitivity and efficiency
- Higher library yields compared to other library prep kits
- High efficiency enables PCR-free workflow from 100 ng input

### Streamlined workflow (250 pg – 1 µg input DNA)

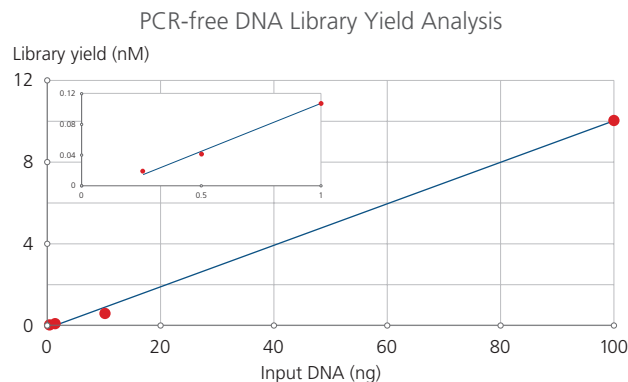


### Maximize library yields



**Figure 3** sparQ DNA Library Prep Kit produces high quality libraries from a broad range of DNA inputs with significantly higher yields. Libraries were prepared with Covaris-sheared human genomic DNA (250 bp average size) using kit manufacturers' instructions. Amplified libraries (6 PCR cycles for 100 ng input DNA and 13 PCR cycles for 1 ng input DNA) were quantified with Qubit fluorometric method.

### Consistent library prep efficiency



**Figure 4** sparQ DNA Library prep Kit resulted in consistent library prep efficiency across a broad range of sample inputs. Libraries were prepared from Covaris-sheared human genomic DNA with sparQ DNA Library Prep Kit without library amplification. Pre-amplified libraries were quantified with qPCR-based method.

## sparQ HiFi PCR Master Mix

High-fidelity, high-efficiency library amplification while maintaining even coverage

### FEATURES AND BENEFITS:

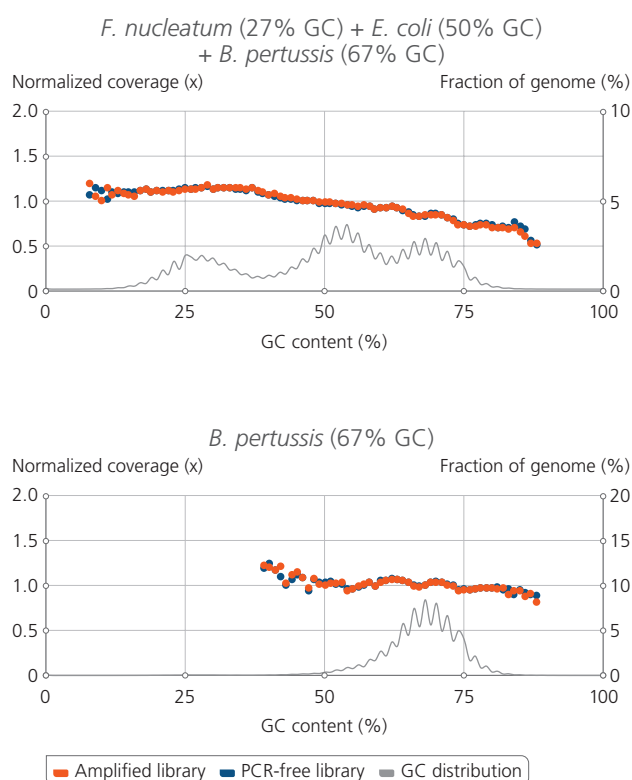
- HiFi DNA polymerase engineered to minimize amplification bias
- Increased amplification efficiency resulting in higher yields
- Uniform coverage across challenging AT- and GC-rich regions
- Robust amplification from input DNA as low as 250 pg
- Cost-effective alternative to KAPA HiFi with improved performance

### Superior amplification efficiency



**Figure 5** Library amplification with sparQ HiFi PCR Master Mix resulted in higher yields. **A** Libraries were prepared from Covaris-sheared human genomic DNA with sparQ DNA library prep kit prior to library amplification. Pre-amplified libraries were then amplified using sparQ HiFi PCR Master Mix (orange) or equivalent kit from Supplier K (blue) and Supplier N (red) with identical PCR cycle numbers. Amplified libraries were quantified with Qubit fluorometric method and qPCR-based quantification method (data not shown). **B** The fragment size distribution and the quality of the amplified DNA libraries from 250 pg input DNA were analyzed using the Agilent BioAnalyzer.

### Superior coverage uniformity



**Figure 6** Consistent coverage over a broad range of GC-content with sparQ HiFi PCR Master Mix. Libraries amplified by sparQ HiFi PCR Master Mix (red) provide uniform GC coverage, similar to corresponding libraries without PCR (blue).

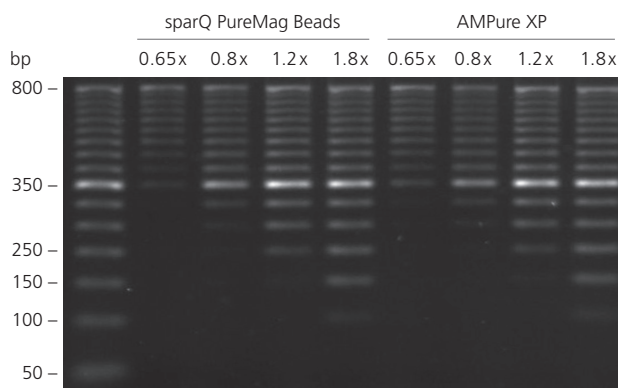
## sparQ PureMag Beads

Fast, reliable DNA purification & size selection for NGS workflows

### FEATURES AND BENEFITS:

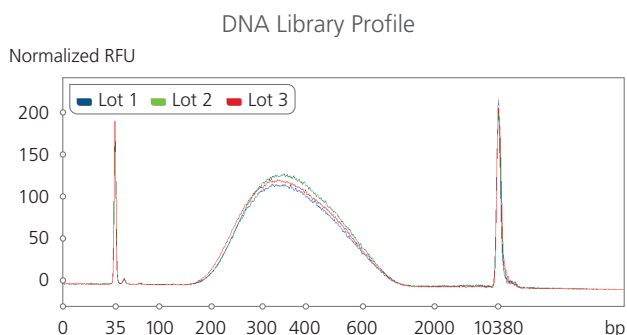
- High recovery of DNA fragments greater than 100 bp
- Efficient removal of unwanted reaction byproducts
- Consistent single- or double-size selection
- Seamless integration into existing NGS workflow and automation friendly
- Cost-effective alternative to AMPure® XP with equivalent performance

### Efficient recovery of DNA



**Figure 7** sparQ PureMag Beads show equivalent performance to AMPure XP for DNA purification. 50 bp DNA ladder was purified with sparQ PureMag Beads and AMPure XP at different beads to DNA ratios and analyzed on 2% agarose gel.

### Highly reproducible purification



**Figure 8** Highly reproducible DNA library profiles were achieved using different lots of sparQ PureMag Beads. Libraries were prepared with sparQ DNA Library Prep Kit from 100 ng of fragmented microbial genomic DNA. sparQ PureMag Beads were used post adapter ligation and PCR amplification to effectively remove adapter-dimers and primer-dimers.

## sparQ Fast Library Quant Kit (for Q)

Achieve faster time to results for accurate quantification of NGS libraries

### FEATURES AND BENEFITS:

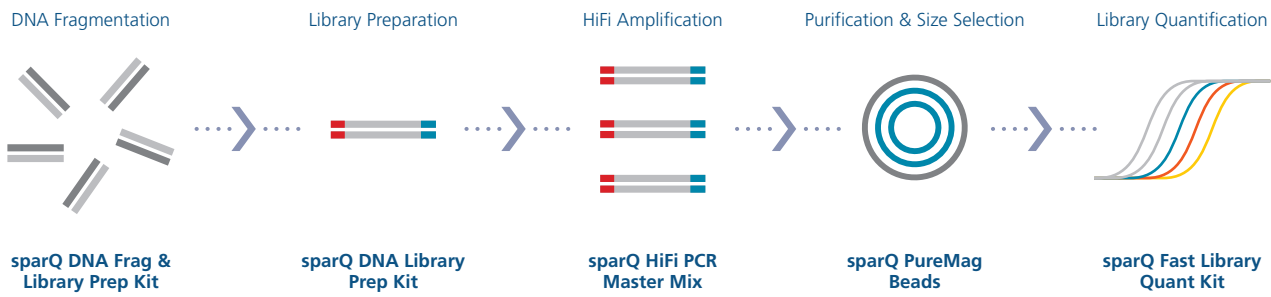
- Optimized for Q real-time qPCR instrument
- 60% shorter run time than typical cycling protocols
- Accurate and reliable quantification of Illumina NGS libraries
- Exceptional quantitative sensitivity and reproducibility
- Stabilized, ready-to-use- DNA standards for convenient use



**Run Time: 36 min**



# Choose sparQ for DNA-seq workflows



Source of Sample	Sample Type	Application
<ul style="list-style-type: none"><li>Human</li><li>Mouse</li><li>Microbial</li><li>Plant</li></ul>	<ul style="list-style-type: none"><li>gDNA</li><li>FFPE</li><li>cfDNA</li></ul>	<ul style="list-style-type: none"><li>Whole genome sequencing</li><li>Exome sequencing</li><li>Targeted sequencing</li><li>Amplicon sequencing</li><li>ChIP sequencing</li></ul>

## ORDER INFO

Product Name	Quantabio Catalog Number	Size
sparQ DNA Frag & Library Prep Kit - 24	95194-024	24 rxns
sparQ DNA Frag & Library Prep Kit - 96	95194-096	96 rxns
sparQ DNA Library Prep Kit - 24	95191-024	24 rxns
sparQ DNA Library Prep Kit - 96	95191-096	96 rxns
sparQ Adapter Barcode Set A	95193-A96	12 single index barcoded for 96 rxns
sparQ Adapter Barcode Set B	95193-B96	12 single index barcoded for 96 rxns
sparQ HiFi PCR Master Mix	95192-050	50 rxns (1 x 1.25 ml)
sparQ HiFi PCR Master Mix	95192-250	250 rxns (5 x 1.25 ml)
sparQ PureMag Beads - 5	95196-005	5 ml
sparQ PureMag Beads - 60	95196-060	60 ml
sparQ PureMag Beads - 450	95196-450	450 ml
sparQ Fast Library Quant Kit (for Q) - 50	95197-050	50 rxns
sparQ Fast Library Quant Kit (for Q) - 500	95197-500	500 rxns

Trademarks: AMPure® XP is a registered trademark of Beckman Coulter; Illumina® is a registered trademark of Illumina, Inc.  
Quantabio products are intended for molecular biology applications. The products are not intended for the diagnosis, prevention or treatment of a disease.  
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