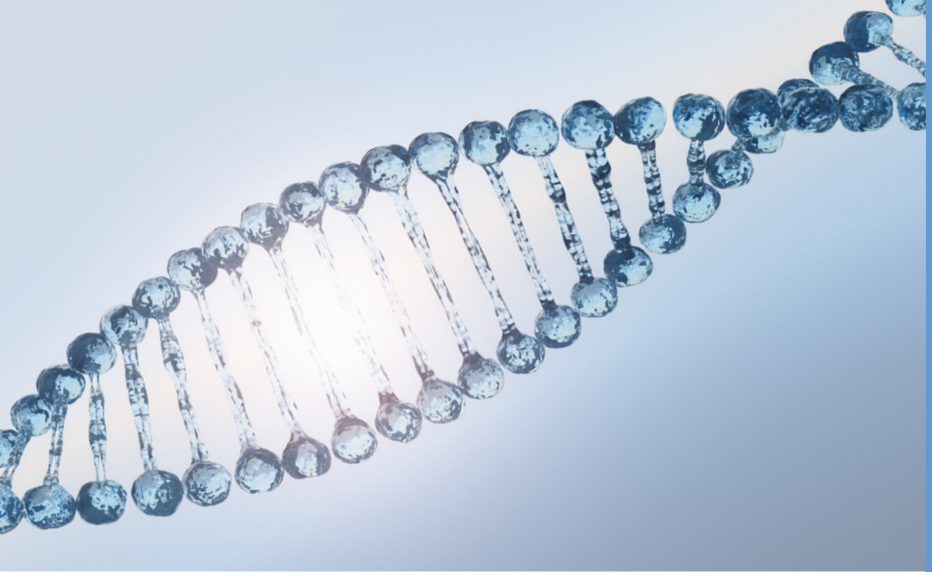


JetSeq™ Lyophilized NGS Library Prep Kit

With the reduction in cost and increased portability of sequencing instruments, consumables, and data analysis tools, NGS is becoming more accessible, affordable, and user-friendly for a wider range of researchers.

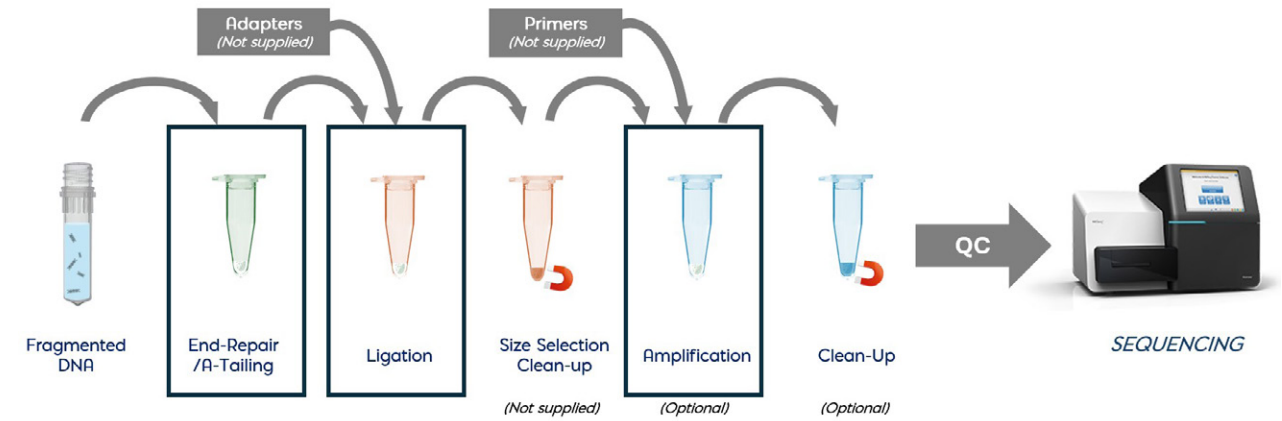
Key product features

- Lyophilized reactions in sealed pouches for ambient temperature stability, transport and storage
- Ready-to-use, just add DNA
- Cost-effective, sustainable and accessible testing for NGS

Recent technological advances have opened the door to smaller and more compact sequencing instruments that have a reduced footprint, user-friendly interface, simplified workflow, and lower sample requirements. These advantages reduce the cost of performing NGS and increase its portability, enabling researchers to conduct sequencing experiments in the laboratory. However, a continuous challenge for NGS researchers has been the requirement of cold-chain shipping and storage for assay reagents. Ensuring the integrity of the cold chain throughout the supply chain logistics, especially in environments with limited refrigeration storage capacity.

The JetSeq™ Lyophilized NGS Library Prep Kit is designed to be a straightforward sustainable workflow, just add the fragmented DNA, then the adapters. It is a ready-to-use complete solution for sequencing-by-synthesis (SBS) protocols, consisting of an end repair/dA-tailing mix module to convert fragmented DNA into 5'-phosphorylated and 3'-dA-tailed DNA fragments, a ligase module, for the addition of sequencing adapters and an optional high-fidelity PCR module for library amplification.

Workflow



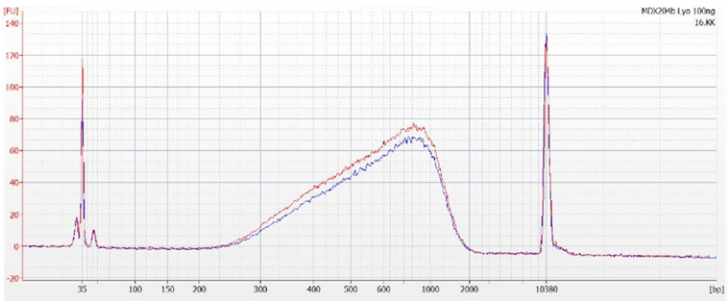
meridian BIOSCIENCE®
LIFE DISCOVERED. LIFE DIAGNOSED.

bioline.com/jetseq

COMPARISON OF LIQUID VS LYOPHILIZED NGS LIBRARY PREP FORMATS

We compared the performance of lyophilized and liquid modules of Meridian's reagents, using genomic DNA from *E. coli*, using either all lyophilized reagents from our kit or all equivalent liquid reagents. The libraries were then pooled together and the whole genome sequencing was done on the Illumina MiSeq platform using a 500-cycle kit that is run at 2 x 250 bp and analyzed, filtered and trimmed based on quality, and aligned to a reference *E. coli* genome.

A) Size



B) Yield

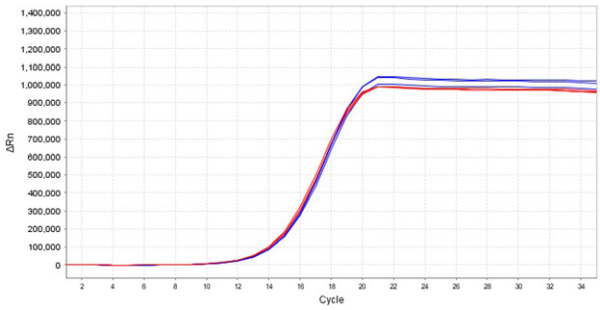
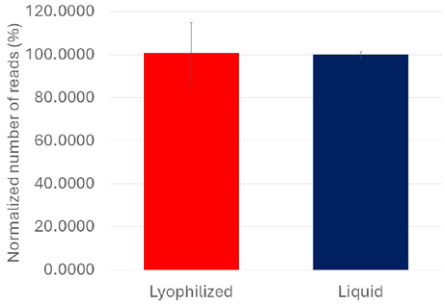


Fig. 1 Library quality and yield
The DNA from the prepared libraries were A) run on a Bioanalyzer®, the red traces representing libraries made with the lyophilized library preparation kit and the blue traces libraries made with all liquid reagents. B) The library yields were quantified using a qPCR-based NGS Library Quantification Kit, with P5 and P7 primers, again red representing libraries from the lyophilized library preparation kit and blue libraries from the liquid reagents. The results illustrate that both lyophilized and liquid formulations generated libraries are of similar quality and yield, demonstrating that the lyophilized reagents match the performance of liquid reagents, producing high-quality and good-yield libraries ready for sequencing.

QUALITY & EFFICIENCY

A) Size



B) Mapping

Library	Average mapped reads (%)
Lyophilized reagents	99.79 ± 0.04
Liquid reagents	99.79 ± 0.12

Fig. 2 Sequencing data quality and mapping efficiency
A) The number of reads before trimming, normalized to the number of reads produced by libraries prepared with liquid reagents and expressed as a percentage. B) Reads were mapped to the *E. coli* reference and discrepancies between sample data and the reference genome were noted. The results demonstrate that both lyophilized and liquid formulations generated libraries with comparable numbers of reads and both are just as effective in producing high-quality, mappable reads.

GC CONTENT

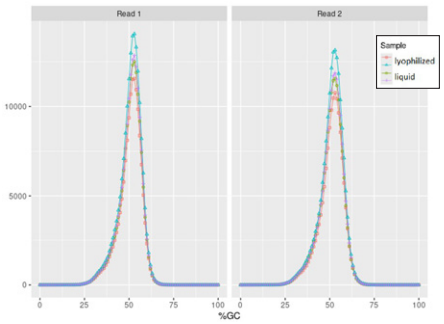


Fig. 3 GC content of the libraries
Both libraries were amplified using the additional PCR module and the GC content analysed to determine if the amplification introduced any bias. The results demonstrate that the GC content between the samples follows the normal distribution and peaks that you expect for the *E. coli* genome, so that there is no bias with the libraries.

ORDERING INFORMATION

Product	Size	Cat. #
JetSeq™ Lyophilized NGS Library Prep Kit (PCR-Free)	8 Reactions	BIO-68033
JetSeq™ Lyophilized NGS Library Prep Kit	8 Reactions	BIO-66034

Contact information:

Meridian
E: info@meridianlifescience.com
Toll free: +1 800 327 6299

meridian BIOSCIENCE®
LIFE DISCOVERED. LIFE DIAGNOSED.

bioline.com/sensifast

Connect with us: