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TruSeq® Nano DNA Library Prep Kit for NeoPrep™

DNA library preparation providing comprehensive genomic coverage with low DNA input and greatly reduced hands-on time.

Highlights

- **Simplified and Seamless Workflow Solution**
  Includes onboard quantification and normalization to deliver sequencing-ready libraries
- **Exceptional Performance and Reproducibility**
  Generates libraries with TruSeq Nano DNA coverage and quality, with minimal hands-on time and reduced user variability
- **Low Input Requirement**
  Requires as little as 25 ng gDNA to prepare high-quality, sequencing-ready libraries

Easier, Faster Library Prep with TruSeq Nano DNA for NeoPrep

The proven TruSeq Nano DNA biochemistry is now supported by the NeoPrep Library Prep System, an integrated solution for preparing libraries for sequencing on any Illumina sequencing platform, making library prep far easier than ever before. The NeoPrep System significantly simplifies library prep, delivering reproducible, sequencing-ready libraries that generate high-quality data and superior genomic coverage with minimal hands-on time.

Simplified, Sequencing-Ready Libraries

With the NeoPrep System, users simply load mechanically fragmented gDNA samples and reagents into the NeoPrep library card, press Start Run, and return later to collect quantified and normalized libraries. The NeoPrep instrument easily accomplishes blunt-end DNA fragment generation, bead-based fragment size-selection, and index adapter ligation, eliminating hours of manual preparation steps. The simple, intuitive workflow delivers 16 sequencing-ready libraries, with just 30 minutes of hands-on time (Figure 1).

High Quality With Low Input

By using digital microfluidics, the NeoPrep System enhances TruSeq Nano DNA performance, ensuring high consistency in the results generated by multiple users. Digital microfluidics precisely manipulates droplets, and requires less DNA input, enabling high-quality performance from as little as 25–75 ng of gDNA (Table 1). In addition, successful libraries have been demonstrated with DNA inputs ranging from 1–100 ng, up to 10-fold lower than required by manual protocols.

Table 1: Lab Efficiency Comparison

	Manual	NeoPrep
Reagent Kit	TruSeq Nano DNA Library Prep Kit	TruSeq Nano DNA Library Prep Kit for NeoPrep
Input Quantity	100–200 ng	25-75 ng
Library Prep Assay Time[a]	~ 5.5 hours	5 hours
Hands-On Time[b]	~ 4 hours	30 minutes
Target Insert Size	350 bp or 500 bp	350 bp or 500 bp
Library Quantification Device	Qubit, qPCR, or RT-PCR instrument	N/A

a. NeoPrep assay time is 7.5 hours when library prep, quantification, and normalization are performed.
b. Hands-on time is for 16 libraries from library prep through normalization.

Together, the NeoPrep Library Prep System and TruSeq kits for NeoPrep are integral components of the comprehensive Illumina NGS solution. NeoPrep libraries can be sequenced on any Illumina sequencing system, and the data can be analyzed with BaseSpace® Core Apps, providing a seamless workflow solution for a wide range of genomic applications.

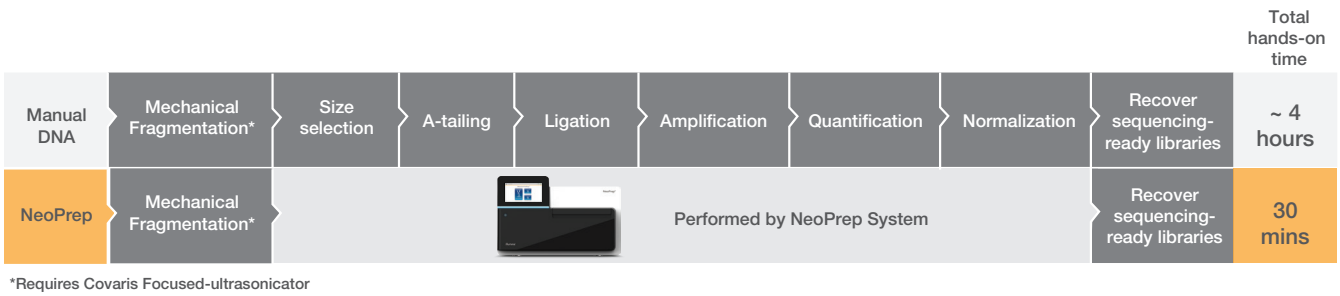

Figure 1: TruSeq Nano DNA Manual and NeoPrep Library Workflows—Both workflows begin with mechanically fragmented gDNA. The NeoPrep System reduces hands-on time from 4 hours to 30 minutes by automating the remaining steps of the workflow.

Fewer Steps, Less Hands-On

The NeoPrep System substantially simplifies the TruSeq Nano DNA workflow, decreasing the overall hands-on time required to prepare libraries. The result is significantly less preparation time, far less ancillary equipment needed, faster run times, and significant improvement in library reproducibility (Table 1).

Excellent Genomic Coverage

The workflow reduces library bias and improves coverage uniformity across the genome, providing excellent coverage of traditionally challenging genomic content, including GC-rich regions, promoters, and repetitive regions. High data quality delivers base-pair resolution, providing a detailed view of somatic and *de novo* mutations, and supporting accurate identification of causative variants (Figure 2).

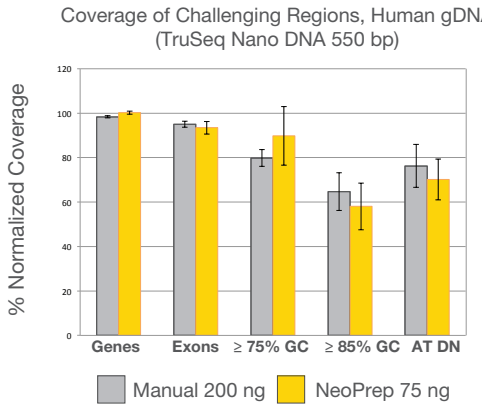

Figure 2: NeoPrep and Manual Library Prep Methods—Libraries prepared with the NeoPrep System show equivalent performance to comparable manual methods using Illumina TruSeq Nano DNA. ≥ 75% GC and ≥ 85% GC content are defined as regions with 100 bases containing ≥ 75% GC and ≥ 85% GC content. AT DN indicates 30 bases of repeated AT dinucleotide.

Summary

The TruSeq Nano DNA kit for NeoPrep combines the proven performance of TruSeq chemistry with the simplicity of the NeoPrep System to empower the most widely adopted library preparation method in the industry. The TruSeq Nano DNA workflow requires less input DNA, and reduces PCR-induced bias to facilitate detailed and accurate insight into the genome. TruSeq Nano DNA Kit-NeoPrep libraries can be run on any Illumina sequencing system and, when coupled with data analysis using BaseSpace Core Apps, provide a complete, seamless workflow for a range of genomics applications.

Learn More

To learn more about the NeoPrep System, visit: www.illumina.com/neoprep.

For more information about the TruSeq Nano DNA Library Prep kits, visit: www.illumina.com/nano.

Ordering Information

Kit Name	Catalog No.
TruSeq Nano DNA Library Prep Kit for NeoPrep (16 samples, 24 indexes)	NP-101-1001
System Name	
NeoPrep Library Prep System (installation included)	SE-601-1001

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