

Nextera[®] XT DNA Library Preparation Kit

The fastest and easiest library prep workflow for small genomes, PCR amplicons, and plasmids.

Highlights

- Rapid Library Preparation**
Complete library prep in as little as 90 minutes with only 15 minutes of hands-on time
- Fastest Time to Results**
Go from DNA to data in 8 hours with the MiSeq[®] System
- Optimized for Small Genomes, PCR Amplicons, and Plasmids**
One library prep kit for many applications
- Innovative Sample Normalization**
Eliminates the need for library quantification before sample pooling and sequencing

Introduction

The Nextera XT DNA Library Preparation Kit enables researchers to prepare sequencing-ready libraries for small genomes (bacteria, archaea, and viruses), PCR amplicons, and plasmids in 90 minutes, with only 15 minutes of hands-on time. The combination of the MiSeq System and Nextera XT DNA Library Preparation Kits enable you to go from DNA to data in 8 hours (Figure 1). The low amount (1 ng) of input DNA makes this method amenable to precious samples available in limited quantity. Compatible with all Illumina sequencers, Nextera library preparation can shorten the overall sequencing workflow time for a wide variety of established applications¹⁻⁹ and can be automated easily for greater throughput.

Fastest and Easiest Library Prep Workflow

Using a single “tagmentation” enzymatic reaction, sample DNA is simultaneously fragmented and tagged with adapters. An optimized, limited-cycle PCR protocol amplifies tagged DNA and adds sequencing indexes (Figure 1). From start to finish, the complete Nextera XT protocol is over 80% faster than other available library preparation methods, and requires the least amount of hands-on time.

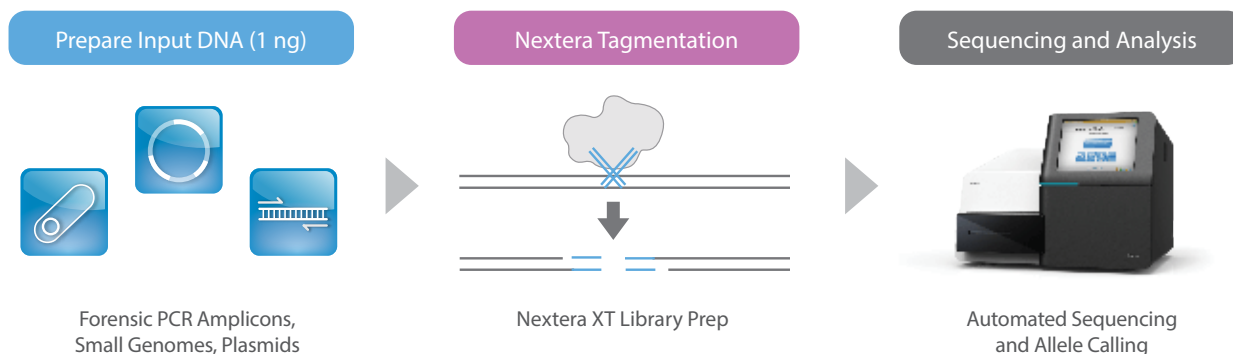
Innovative Sample Normalization

Library preparation kits for next-generation sequencing result in libraries of varying concentration. To pool samples equally and achieve target cluster densities, time-intensive quantitation methods are often used, followed by dilution and pooling of barcoded samples. The Nextera XT DNA Library Preparation Kit eliminates the need for library quantification before sample pooling and sequencing by employing a simple bead-based sample normalization step (Figure 2). Prepared libraries are produced at equivalent concentrations enabling pooling by volume—simply pool 5 μ l of each library to be sequenced.

Flexible Multiplexing

The Nextera XT Library Preparation Kit features an innovative indexing solution for processing and uniquely barcoding up to 384 samples in a single experiment. Following the addition of two indexes to each DNA fragment, up to 384 uniquely indexed samples can be pooled and sequenced together. After sequencing, the unique combination of the two indexes is used to demultiplex the data and assign reads to the proper sample. Using this dual-barcode approach, Nextera XT Index Kits only require 40 unique index oligos to process up to 384 samples

Figure 1: Nextera XT Library Preparation Workflow



The combination of Nextera XT and rapid sequencing with the MiSeq System provides a complete DNA to data workflow in only 8 hours.

Summary

Nextera XT DNA Library Preparation Kits are ideal for experiments where speed and ease are of paramount importance. Providing the fastest and easiest library preparation workflow, the Nextera XT DNA Library Preparation Kit enables rapid sequencing of small genomes, PCR amplicons, and plasmids. Combined with the MiSeq and NextSeq™ Systems, Nextera XT DNA Library Preparation Kits enable you to go from DNA to data—all in a single day.

References

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10. basespace.illumina.com

Nextera XT DNA Library Prep Kit Specifications

Specification	Value
Sample DNA input type	Genomic DNA, PCR amplicons, plasmids
Input DNA	1 ng
Typical median insert size	< 300 bp
Available indexes	Up to 384
Compatible sequencers	MiSeq, NextSeq, and HiSeq® Systems
Read lengths supported	Supports all read lengths on any Illumina sequencing system

Ordering Information

Product	Catalog No.
Nextera XT DNA Library Preparation Kit (24 samples)	FC-131-1024
Nextera XT DNA Library Preparation Kit (96 samples)	FC-131-1096
Nextera XT Index Kit (24 indexes, 96 samples)	FC-131-1001
Nextera XT Index Kit (96 indexes, 384 samples)	FC-131-1002
TruSeq® Dual Index Sequencing Primer Kit, Single Read (single-use kit)*	FC-121-1003
TruSeq Dual Index Sequencing Primer Kit, Paired-End Read (single-use kit)*	PE-121-1003
Nextera XT Index Kit v2, Set A (96 indexes, 384 samples)	FC-131-2001
Nextera XT Index Kit v2, Set B (96 indexes, 384 samples)	FC-131-2002
Nextera XT Index Kit v2, Set C (96 indexes, 384 samples)	FC-131-2003
Nextera XT Index Kit v2, Set D (96 indexes, 384 samples)	FC-131-2004

*Sequencing primer kits are required for all sequencers except the MiSeq System.

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