





To enable success of our customers  
Together to make a healthier and brighter world

The YEASEN logo is displayed within an orange square that has a wavy bottom edge. The logo itself is white, with the word "YEASEN" in a bold, sans-serif font and a small green leaf icon above the letter 'A'.

# Complete Solution for Next-Generation-Sequencing Library Preparation

**Yeasen Biotechnology (Shanghai)Co., Ltd.**

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# COMPANY OVERVIEW

## About Yeasen Biotechnology



Focusing on the core raw materials of the life science industry, Yeasen Biotechnology (Shanghai) Co., Ltd. is a biotechnology company engaged in the research and development, production and sales of three major categories of biological reagents: molecules, proteins and cells. Yeasen has become an excellent high-tech enterprise in China, and has both independent R&D capabilities of core technologies of molecular enzymes, proteins, antibodies, nucleic acids, and cells, and large-scale production capabilities of related enzymes raw materials. Products are widely used in the field of life science research, diagnosis and detection, and biomedicine.

# Yeast and High-throughput Sequencing

High-throughput sequencing technology is a revolutionary innovation to traditional sequencing technology which has greatly advanced the development of science and technology. Yeasen maintained a strong focus on high-throughput sequencing technology and has established a high-throughput sequencing-related product development team with experienced scientists in the fields of genomics and bioinformatics. Currently, Yeasen has a complete product line of upstream sample library preparation for high-throughput sequencing. We provide high-quality products and complete solutions for library preparation to high-throughput sequencing users. At the same time, we develop customized sequencing-related products according to user needs, dedicated to obtaining more accurate and comprehensive sequencing information.



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## DNA Library Preparation

DNA-seq (DNA sequencing) is the process of determining the nucleic acid sequence – the order of nucleotides in DNA using the high-throughput sequencing method. Library preparation is a necessary step to transform DNA into a library which suitable for high-throughput sequencing.

### Mechanical Fragmentation Library Preparation

#### Hieff NGS™ Ultima Pro DNA Library Prep Kit (Cat#12197)

Hieff NGS™ Ultima Pro DNA Library Prep Kit is a new generation library construction kit specially developed and designed for the Illumina and MGI high-throughput sequencing platform. The high-fidelity enzyme significantly improves the uniformity and fidelity of amplification. The kit is compatible with most DNA sample types, including standard genomic DNA from animals/plants/microorganisms, FFPE samples, cfDNA, and CHIP DNA.

### Product Information

- High library yield



Figure 1. Hieff NGS Ultima Pro Prep Kit produces excellent library yield among different species gDNA input.

- Low percentage of adaptors self-ligation and mismatch

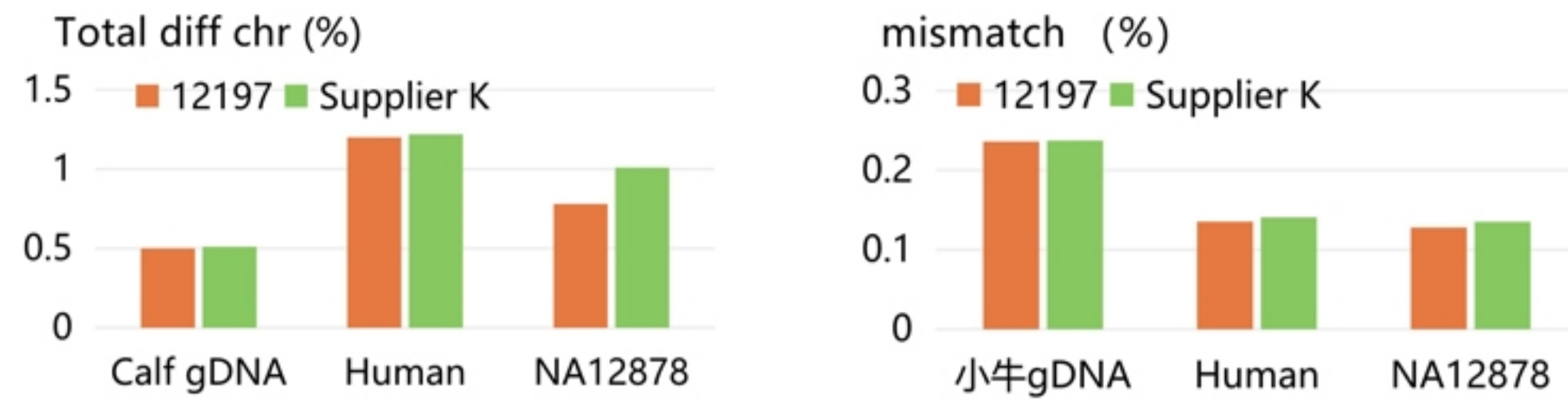
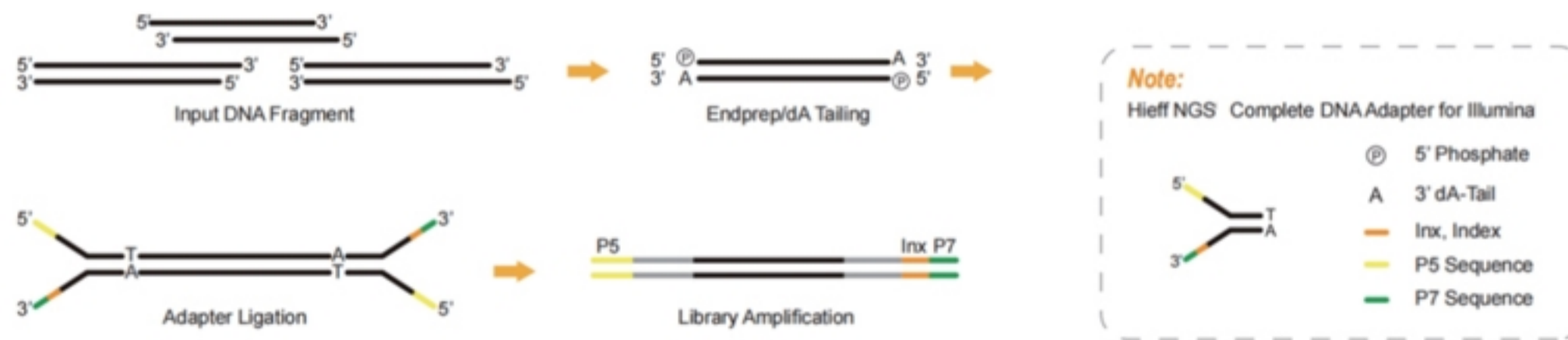


Figure 2. Hieff NGS Ultima Pro Prep Kit produces library with lower self-ligation rate and mismatch rate among different species gDNA input.

### Workflow



### Enzymatic Fragmentation Library Preparation

#### HiEff NGS™ OnePot Pro DNA Library Prep Kit for Illumina (Cat#12205)

The OnePot series DNA library preparation kits developed for the Illumina platform utilize a patent non-restrictive endonuclease which fragments the DNA to targeted sizes in a time-dependent manner. This kit enables the single-step reaction of fragmentation, end-repair, and A-tailing without the requirement of beads clean-up, significantly reducing material loss, experimental costs, and hands-on time. The kit has a high library conversion rate and can be applied for most DNA samples from animals, plants, and microorganisms, including low-quality samples such as FFPE samples. The recently upgraded formulas enable higher efficiencies in end repair, dA-tailing, and adapter ligation than the previous versions. The high-fidelity polymerase used in this kit significantly reduces error rates and GC bias, resulting in more accurate and even represented sequencing data.

### Product Information

- Low GC content bias

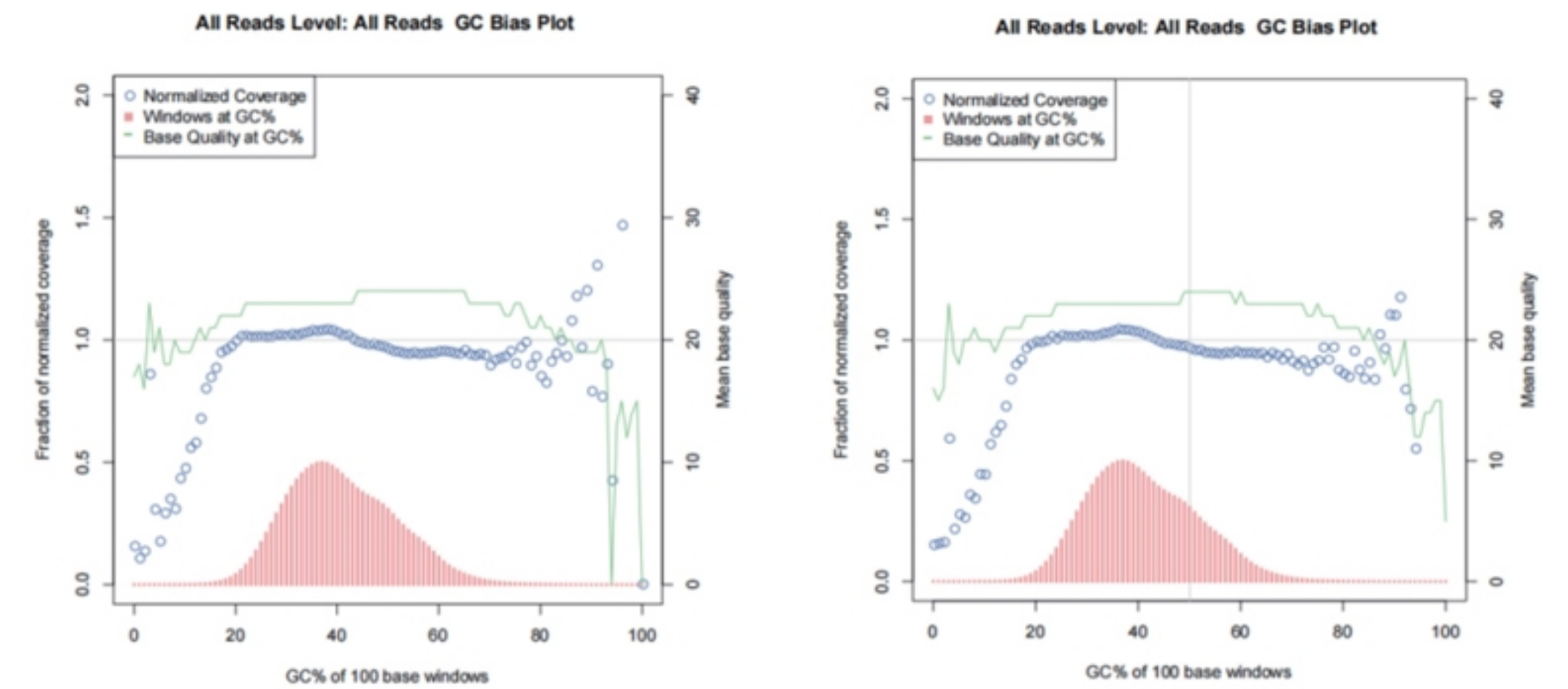


Figure 1. Normalized coverage per 100bp of genome shows low GC bias of OnePot Pro Kit

- Low enzyme digest bias

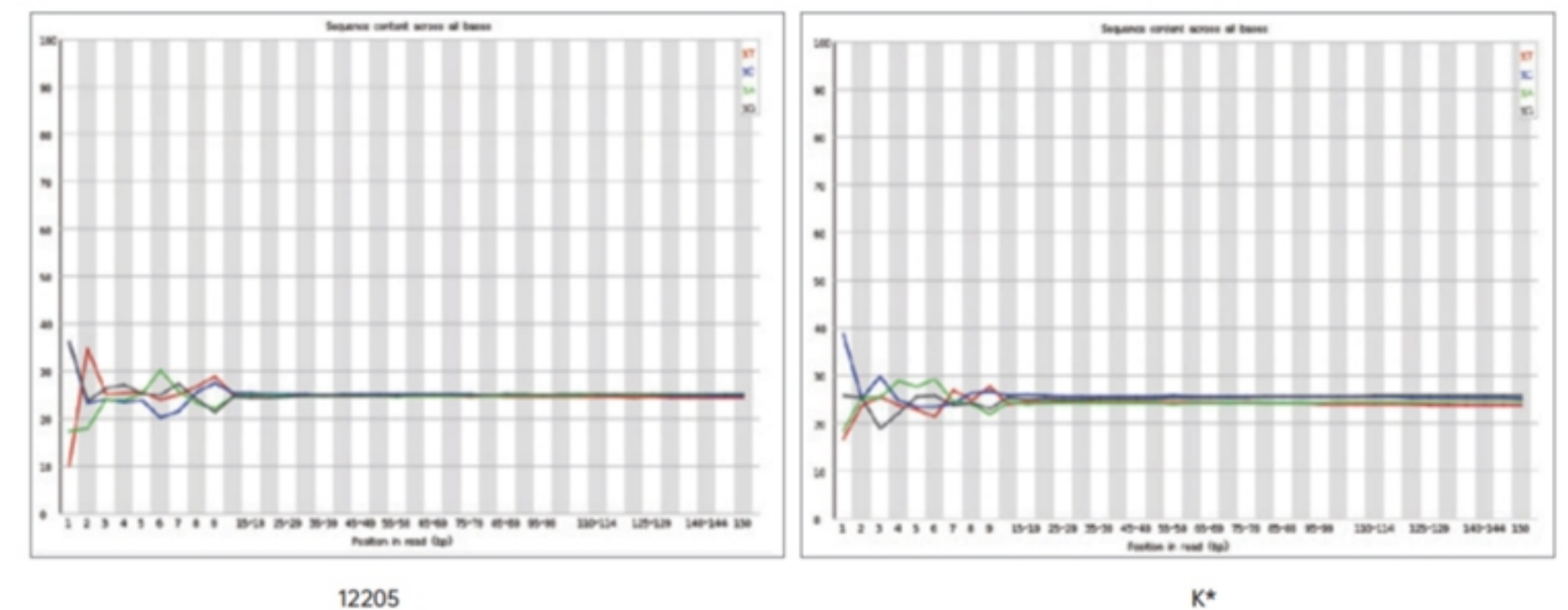


Figure 2. Base distribution of library sequence. 12205 demonstrate lower enzyme digest bias

# RNA Library Preparation

RNA-Seq (RNA sequencing) is a sequencing technique which uses next-generation sequencing (NGS) to reveal the presence and quantity of RNA in a biological sample at a given moment, analyzing the continuously changing cellular transcriptome. RNA library preparation includes cDNA (complementary DNA) synthesizing and adaptors ligation which transform RNA into cDNA libraries.

## mRNA Library Preparation

### Hieff NGS™ Ultima Dual-mode mRNA Library Prep Kit (Cat#12309)

Hieff NGS™ Ultima Dual-mode mRNA Library Prep Kit is a mRNA transcriptome library construction kit compatible with Illumina and MGI high-throughput sequencing platforms. Compared with the traditional library construction method, this product combines cDNA second strand synthesis with Endprep and dA-tailing, which greatly reduces the time for library construction and simplifies the operation. The two-strand synthesis module is equipped with two buffers to meet the need for conventional library or strand-specific library. This product is compatible with 10 ng-4 μg of input total RNA from eukaryotes. After mRNA isolation, fragmentation, double-stranded cDNA synthesis, end repair, dA-tailing, adapter ligation, and library amplification, the total RNA sample is finally converted into a library suitable for sequencing on the Illumina or MGI platform.

## Product Information

- Stable library size and yield

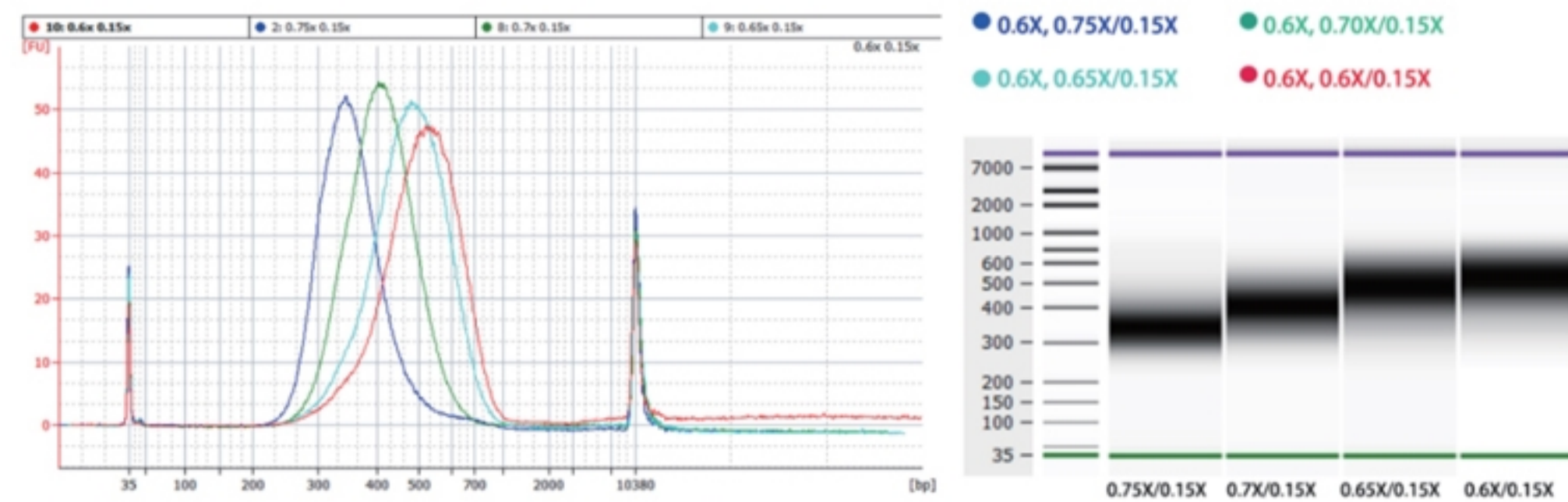


Figure 1. Ultima Dual-mode RNA Kit suits for various library size demand and produces stable library yield.

- Applicability for low quality sample

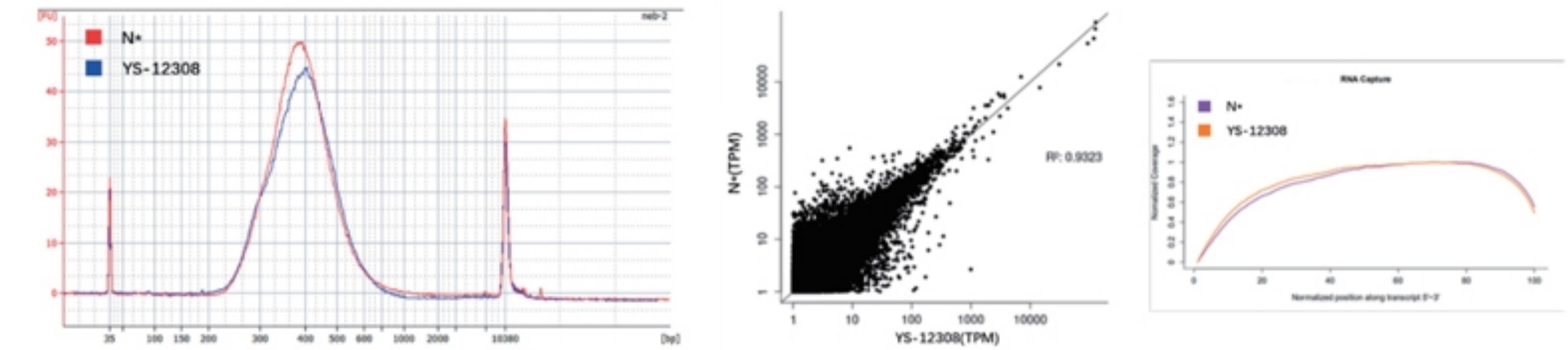


Figure 2. Ultima Dual-mode RNA Kit produces high quality FFPE sample library with precise size, high concentration and complete gene coverage

- Concentrated mRNA fragment size distribution

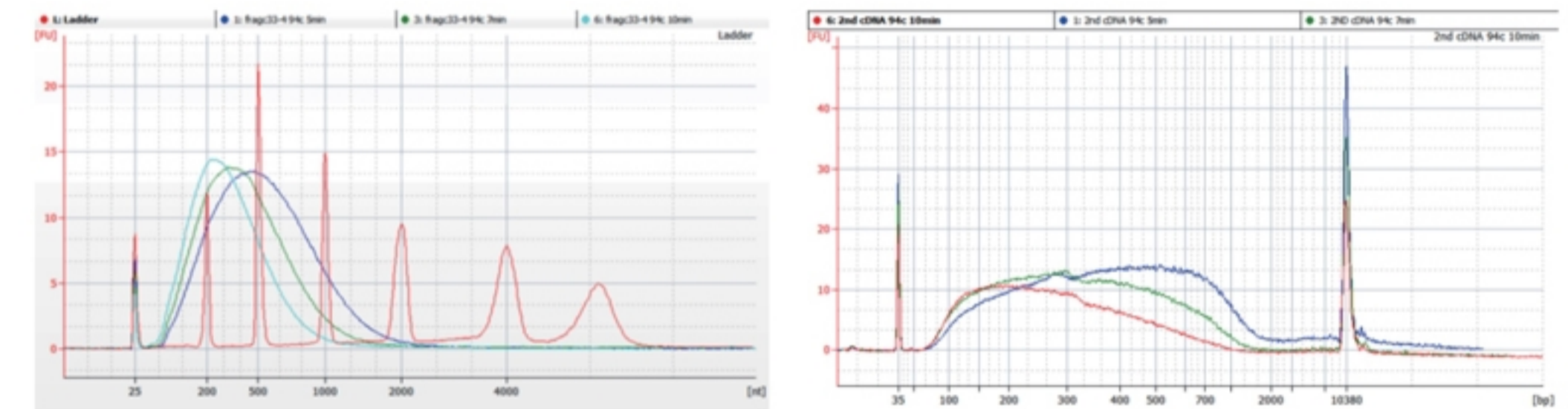
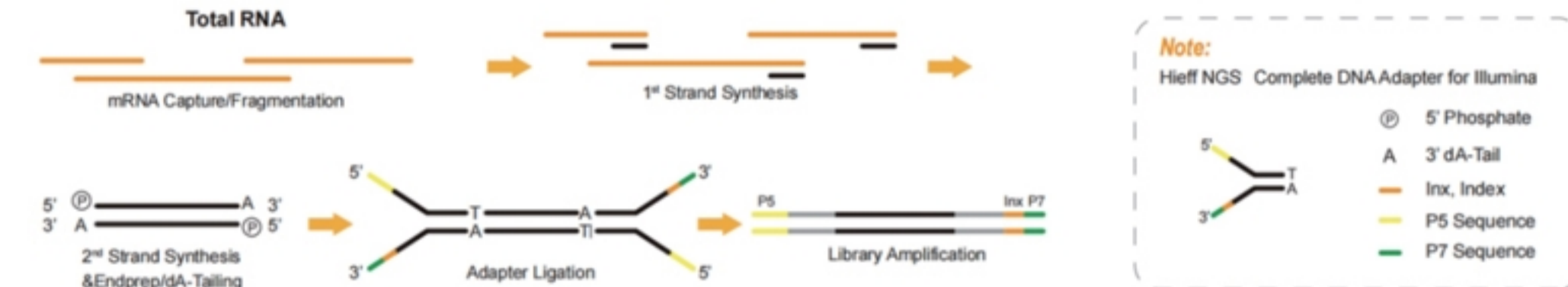


Figure 3. Electropherogram of mRNA fragmentation products and cDNA after reverse transcription shows remarkable fragmentation result of Ultima Dual-mode mRNA Kit.

• **Reliable stability**

Storage days	Lib Yield (ng/μL)	Clean Reads	Raw q30 (%)	Clean GC (%)	rRNA (%)	Map Ratio (%)	Dup (%)	gene (FPKM>0)	gene (FPKM>1)	Transcript (FPKM>1)	Exons (%)
CON	33	2601125	91.45	49.78	1.32	97.72	15.6981	18371	14848	31923	96.0779
2 day	36.2	2468738	91.43	49.76	1.09	98.07	15.5047	18144	14782	31602	96.0606
4 day	43	2464046	91.09	49.96	0.99	97.99	15.3524	18134	14874	31782	96.0341
6 day	41.6	2386474	91.46	50.02	1.07	98.06	15.5702	17947	14740	31832	96.1017
8 day	39.2	2831774	91.49	50.03	1.02	98.07	17.1397	18399	14831	32243	96.1004
10 day	36	2596121	90.79	49.99	1.03	97.97	15.8633	18196	14754	31693	96.0803
12 day	39.4	2404804	90.86	90.86	0.99	97.99	15.5649	17974	14821	31649	96.0008
14 day	37.6	2483387	91.46	91.46	1.03	98.12	14.7907	18025	14814	31815	96.1161

**Workflow**



# Library Quantification

For high-quality sequencing data, accurate library quantitative analysis is very important. If the measured quantitative concentration of the library is higher than the actual value, insufficient clustering will happen and decrease the amount of sequencing data obtained; if lower, it may generate inter-cluster signal interference which will cause low-quality data and even sequencing failure. Therefore, the accurate quantification of libraries is very important.

## Fluorescent Library Quantification

### 1×dsDNA HS Assay Kit for Qubit®(Cat#12642)

1×dsDNA HS Assay Kit for Qubit is a rapid, highly sensitive and accurate fluorescent quantitative detection kit for double-stranded DNA (dsDNA). This kit is highly selective for dsDNA and has good linearity in the range of 0.2 ng-100 ng. This kit is easy to operate, providing a ready-to-use working solution that enables simple dsDNA sample quantification on Qubit Fluorometer or Fluorescence Microplate Reader. It is ideal choice for NGS large-scale DNA sample quantification (such as input DNA quantification, DNA library quantification, etc.). This kit is well tolerated to common contaminants such as proteins and salts.

## Product Information

• **High specificity**

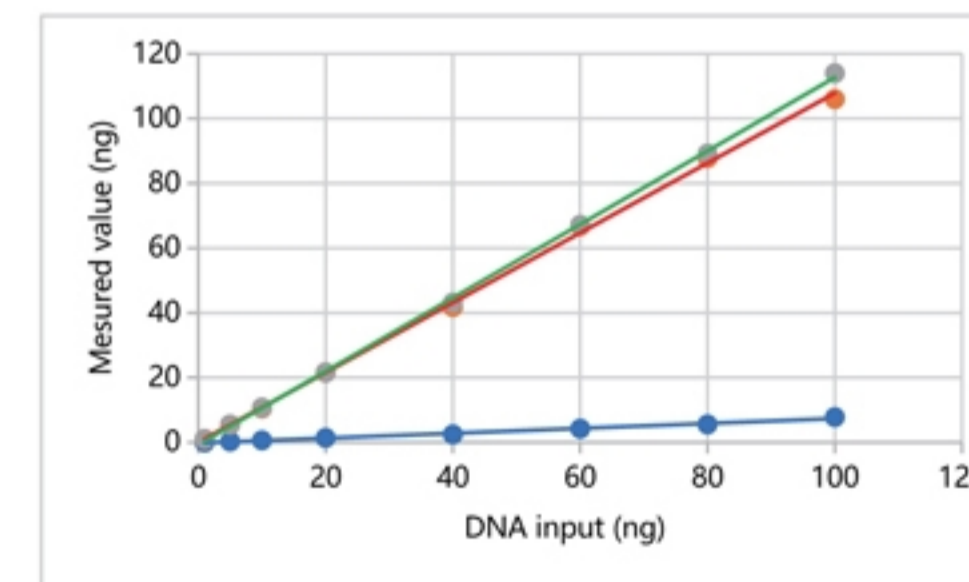


Figure 1. dsDNA HS Assay Kit shows specific detection of dsDNA when mix with equal amounts of ssDNA

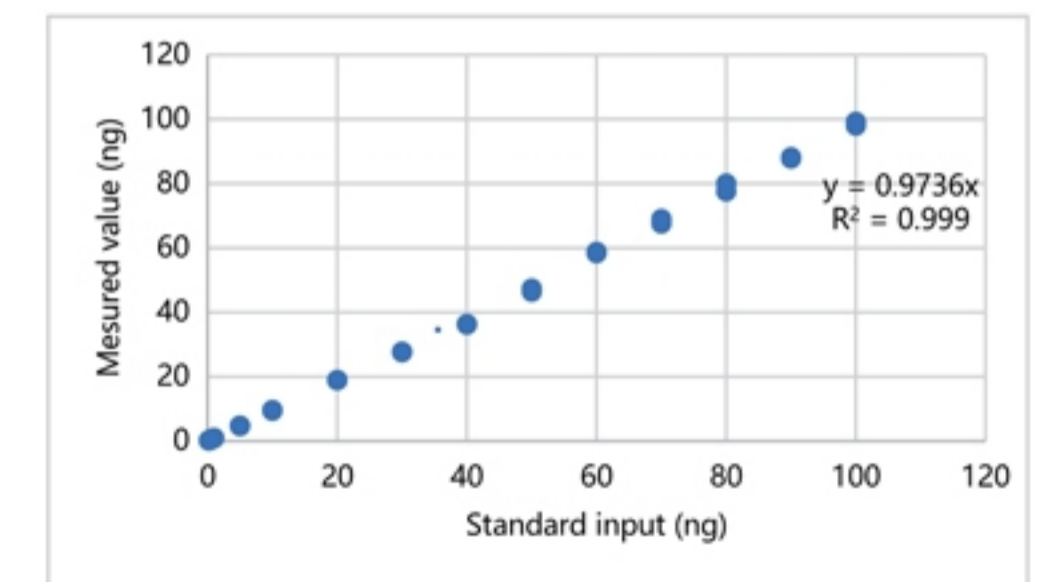


Figure 2. Measured value of gradient dilution standard dsDNA input (0.2ng-100ng)

• High stability

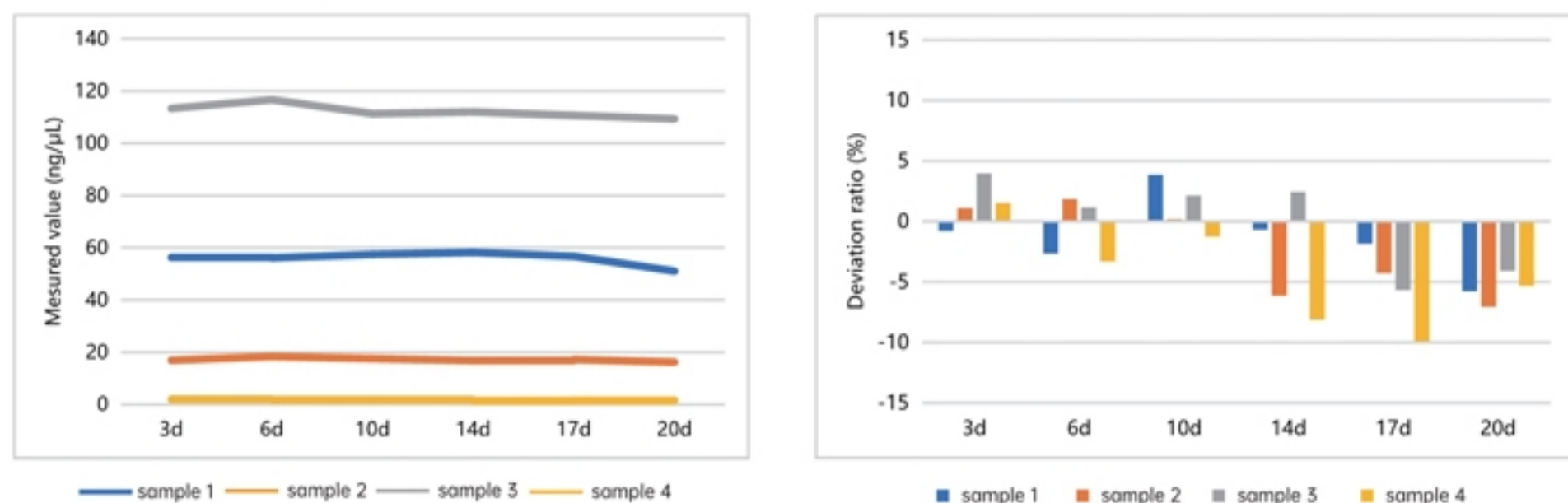
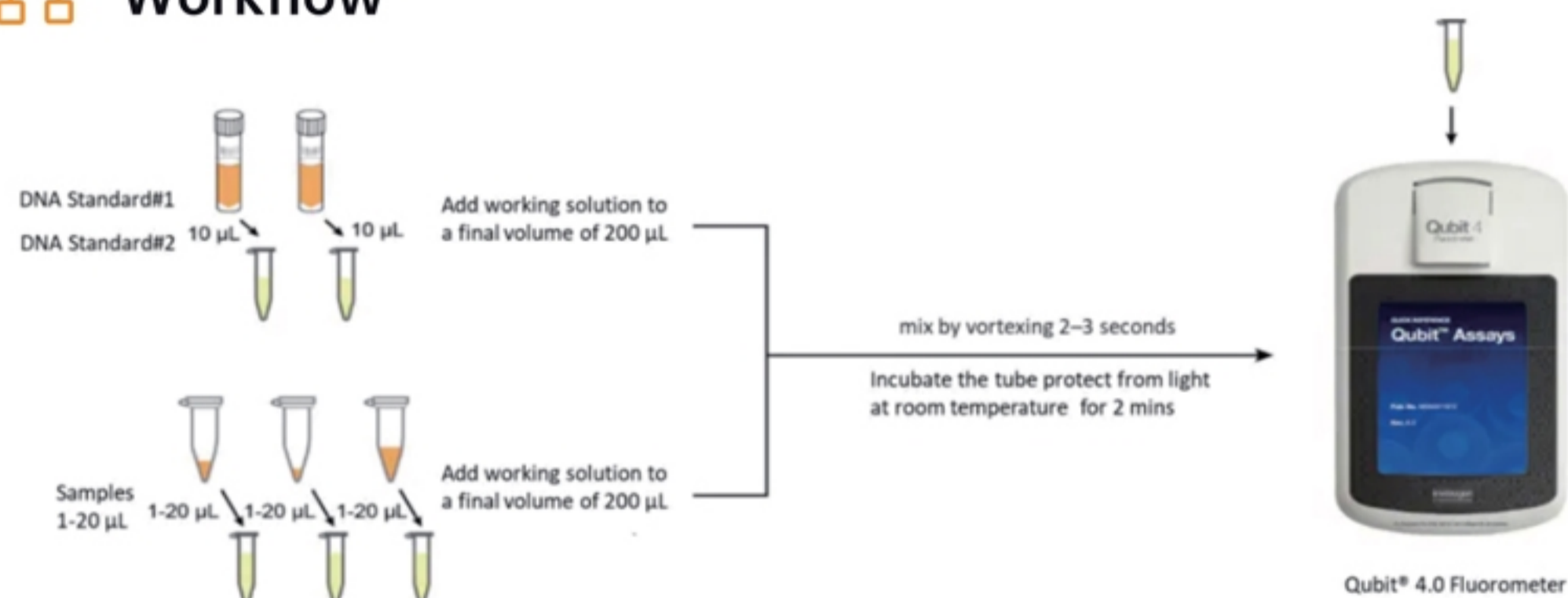


Figure 3. Measured value and its deviation ratio of standard dsDNA using 25°C storage dsDNA HS Assay Kit for different period.

**Workflow**



**Similar products**

Product Name	Cat#	Description
dsDNA HS Assay kit for Qubit	12640	Normal type

# NGS Library Selection/Clean Beads

Magnetic beads are one of the essential products in the process of NGS library preparation to purify DNA or RNA, screen target size fragments, and target enrichment of target nucleic acids.

Hieff NGS™ beads, as the Star Product of Yeasen, is a high-performance and high-yield product that can meet various applications and seamlessly replace BeckMan AMPure XP beads.

## Hieff NGS™ DNA Selection Beads (Cat#12601)

Hieff NGS™ DNA Selection Beads are prepared based on the SPRI (Solid Phase Reverse Immobilization) principle and is applicable for DNA purification and size selection during the preparation of next generation sequencing (NGS) libraries. Hieff NGS™ DNA Selection Beads are compatible with various of DNA and RNA library prep kits.

## Product Information

• High selection precision

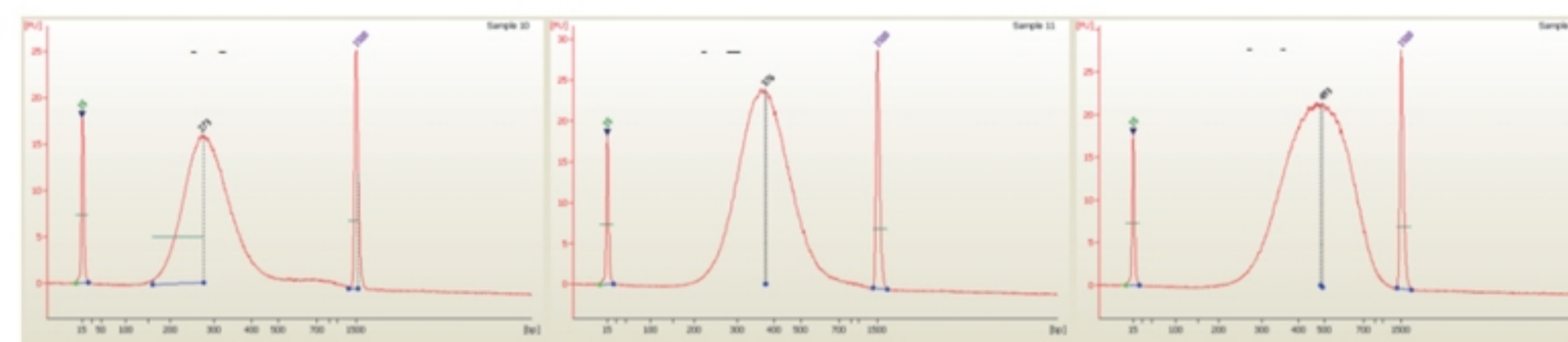
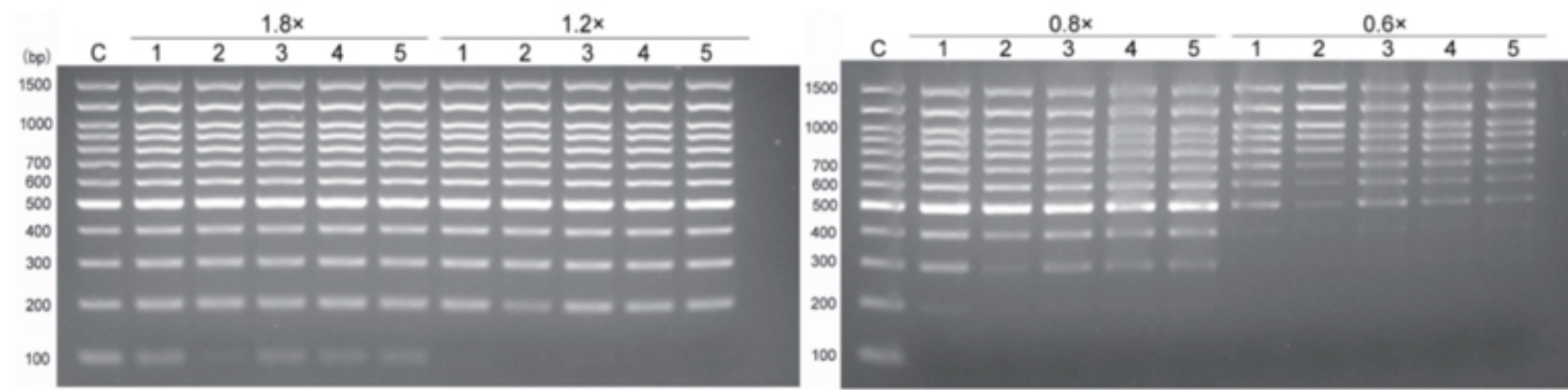


Figure 1. Electropherogram overlays of different DNA size selection products

• Better recovery



Lane 1: 12601; Lane 2: Supplier B; Lane 3: Supplier V; Lane 4: Supplier V2; Lane 5: Supplier T; C: DNA Marker (Cat#10507)

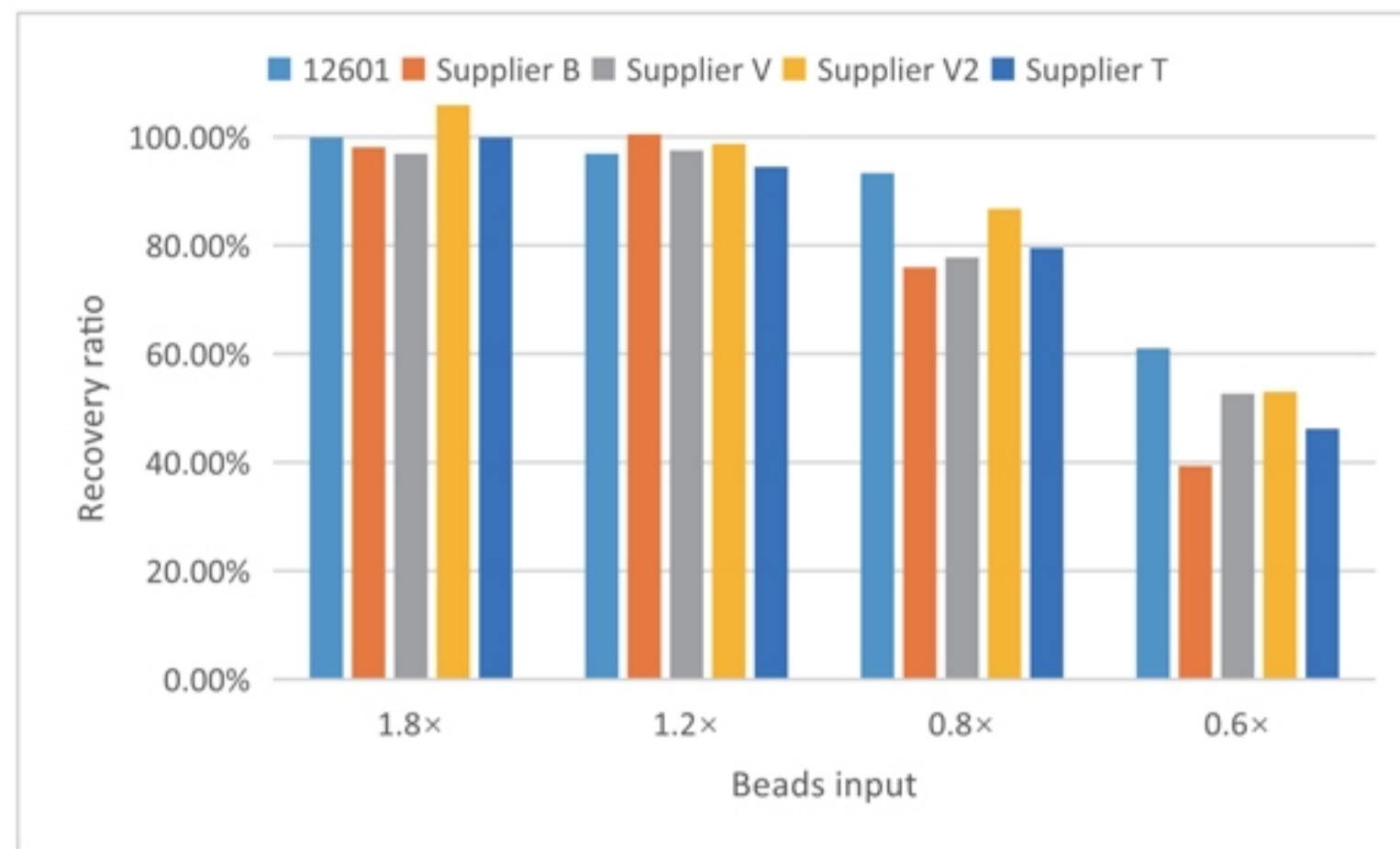
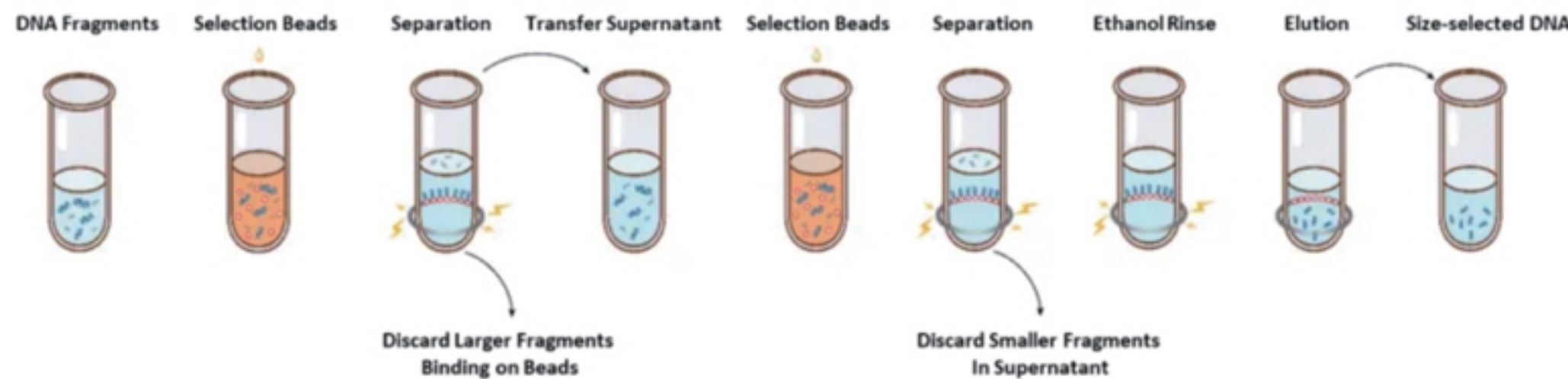


Figure 2. Hieff NGS™ DNA Selection Beads show better recovery than product from other company.

**Workflow**



**Product List**

**DNA Library Preparation**

	Product Name	Cat#	Description
Mechanical fragmentation Library preparation	Hieff NGS™ Ultima Pro DNA Library Prep Kit	12197	Suitable for Illumina & MGI sequencing platform
	Hieff NGS™ Ultima Pro PCR Free DNA Library Prep Kit V2	12196	Suitable for PCR free DNA library preparation
Enzymatic fragmentation Library preparation	Hieff NGS™ OnePot Pro DNA Library Prep Kit for Illumina	12205	Suitable for Illumina sequencing platform
	Hieff NGS™ OnePot II DNA Library Prep Kit for MGI	13321	Suitable for MGI sequencing platform

**RNA Library Preparation**

	Product Name	Cat#	Description
mRNA library preparation	Hieff NGS™ Ultima Dual-mode mRNA Library Prep Kit	12309	Integrated with mRNA Capture Module
Total RNA library preparation	Hieff NGS™ Ultima Dual-mode RNA Library Prep Kit	12308	Suitable for Illumina & MGI sequencing platform

**Library Quantification**

	Product Name	Cat#	Description
Library quantification kit for Qubit	dsDNA HS Assay kit for Qubit	12640	Normal type
	1xdsDNA HS Assay kit for Qubit	12642	Premix type
	ssDNA Assay Kit for Qubit	12645	For ssDNA quantification

**NGS Library Selection/Clean Beads**

	Product Name	Cat#	Description
DNA Beads	Hieff NGS™ DNA Selection Beads	12601	For DNA selection and clean
RNA Beads	Hieff NGS™ RNA Cleaner	12602	For RNA clean

**NGS Library Selection/Clean Beads**

	Product Name	Cat#	Description
Adapter for DNA library preparation	Hieff NGS™ Stubby UDI Primer Kit for Illumina (12/96/192/384 index)	12404/12405/12406/12407	UDI Short adapter for Illumina
	Hieff NGS™ 384 CDI Primer for Illumina	12412/12413	CDI Short adapter for Illumina
	Hieff NGS™ Dual UMI UDB Adapter Kit for MGI	13367/13368	Short adapter for MGI
Adapter for RNA library preparation	Hieff NGS™ Complete Adapter Kit for Illumina, Set1/Set2	13519/12520	Long adapter for Illumina
	Hieff NGS™ Primer Mix for Illumina	13335	RNA library adaptor for Illumina
	HHieff NGS™ Primer Mix for MGI	13334	RNA library adaptor for MGI
Cyclization kit	Hieff NGS™ Fast-Pace DNA Cyclization Kit for MGI	13341	Library cyclization for MGI
	Hieff NGS™ Dual Barcode Fast-Pace™ DNA Cyclization Kit for MGI	13340	Library cyclization for MGI with barcode
rRNA Depletion	Globin mRNA Depletion Probe (Human)	12806	For human globin mRNA depletion
	Hieff NGS™ MaxUp Human rRNA Depletion Kit (rRNA & ITS/ETS)	12257	For FFPE sample
	Hieff NGS™ MaxUp rRNA Depletion Kit (Plant)	12254	For plant sample