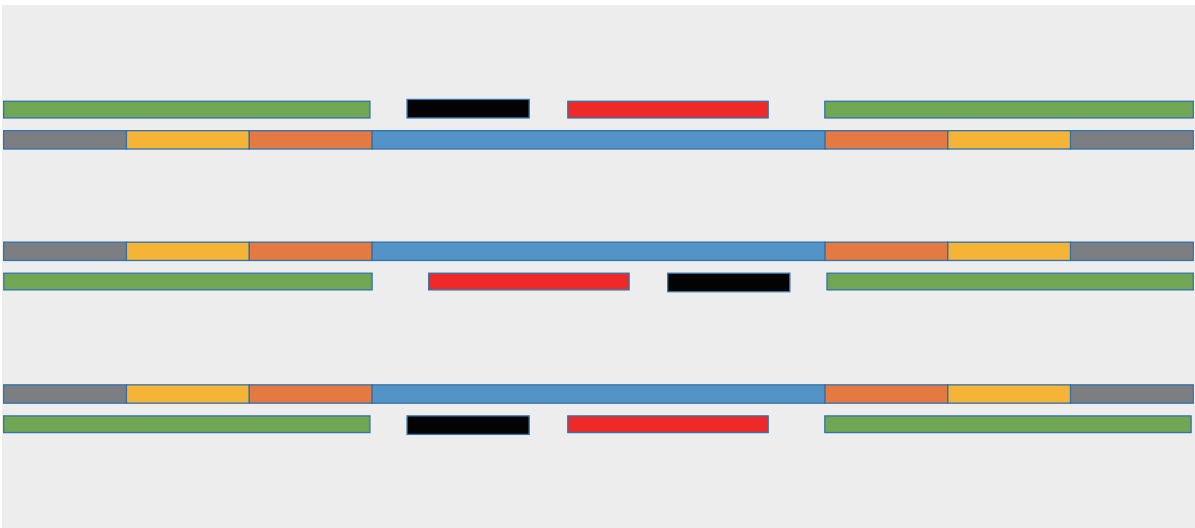




EXPLORE OUR NGS LIBRARY PREP AUTOMATED SOLUTIONS



NGS Library Prep Automated Solutions

■ Product Introduction

Next-generation sequencing (NGS) is a powerful tool for advancing biological research. However, sample preparation for sequencing is often complex and requires specialized expertise. Implementing a reliable fully automated system to streamline the preparation process is an effective way to achieve stable, high-quality NGS libraries. Coupled with automation-compatible reagents and integrated devices, such systems help reduce human error, improve reproducibility, increase laboratory throughput, and save costs, making the entire workflow more efficient and reliable. Bioer offers a comprehensive range of high-quality, smart consumables, automation-ready reagents, and precise instruments to support all upstream steps of sequencing – from nucleic acid purification and magnetic bead-based cleanups to library preparation, quantification, and PCR amplification.

■ Solution Workflow

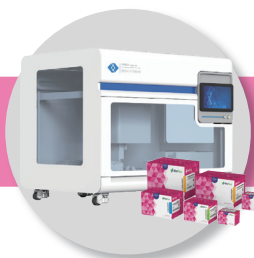
1. Sample Preparation



GenePure Pro Nucleic Acid Purification System

- 1.BSC73 MagaBio plus Whole Blood Genomic DNA Purification Kit II
- 2.BSC74 MagaBio plus General Genomic DNA Purification Kit II
- 3.BSC31 MagaBio FFPE Tissue Genomic DNA Purification Kit
- 4.BSC37 MagaBio plus Tissue Genomic DNA Purification Kit

2. Library Preparation & Cleanup



Automated Liquid Handling Workstation

- 1.BSQ10 BioseqFlex Library Purification Beads
- 2.BSQ15 BioseqFlex Universal FS DNA Library Preparation Kit I
- 3.BSQ16 BioseqFlex Universal DNA Library Preparation Kit I
- 4.BSQ19 BioseqFlex NGS Hybridization Capture Kit I
- 5.Human Hybrid Capture Panel

3. Library Quantification



QuantFlex Fluorometer

- 1.BSB83 1X dsDNA HS Quantification Kit
- 2.BSB116 ssDNA Quantification Kit

Automated Liquid Handling Workstation

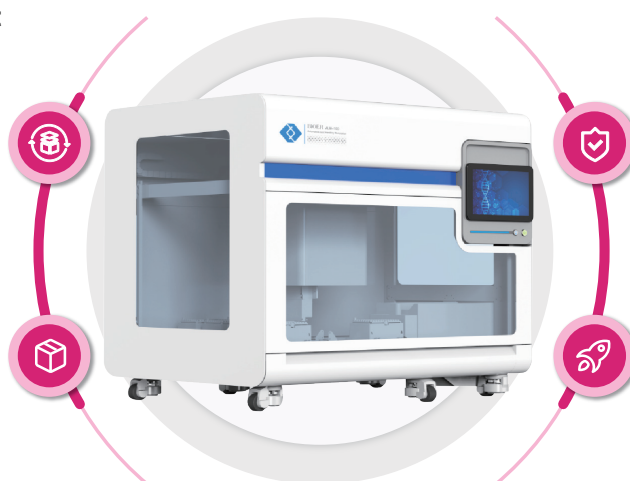
In NGS sequencing experiments, library preparation is a key step for ensuring high-quality sequencing data. However, the process is often complex and requires a high level of technical expertise, making it a major bottleneck in sequencing workflows. An automated liquid handling workstation can precisely transfer microliter volumes, standardize experimental procedures, and significantly improve accuracy and reproducibility, while greatly reducing the difficulty and cost of pre-sequencing library preparation. Bioer's Automated Liquid Handling Workstation- PreFlex 100 is a stand-alone, benchtop system with a modular design that includes PCR, temperature control, magnetic separation, and other multifunctional modules to minimize manual intervention. Its HEPA filtration and UV sterilization systems effectively reduce the risk of cross-contamination.

High-throughput Flexibility

Handles up to 24 samples simultaneously with 16 deck positions for versatile workflow management.

Wide Pipetting Range

1-1000 μ L capacity with single and 8-channel pipettors, supporting diverse sample types and protocols.



Reliable and Reproducible Results

Optimized for use with in-house NGS library prep kits to ensure consistent, high-quality outputs.

Flexible and Customizable Platform

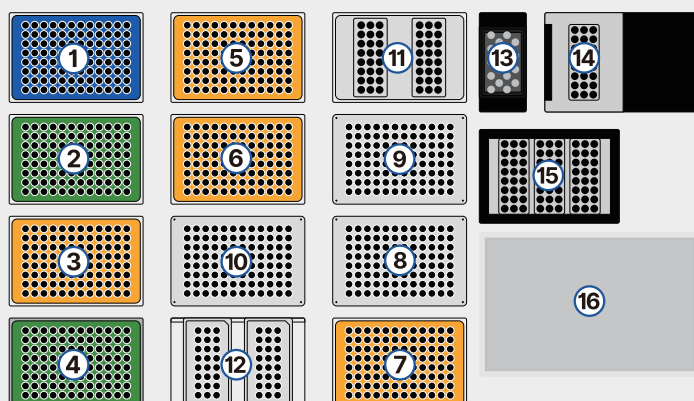
Modular design allows tailored solutions to meet diverse customer applications.

Deck Layout

1-7: Tip Rack (50 μ L, 200 μ L, 1000 μ L)

8-10: Temperature Control Block For Reagent Storage

- Temperature Range: 4°C~110°C



11: Heated Shaking Block

- Temperature Range: Ambient +5°C to 125°C
- Shaking Amplitude: 3 mm
- Shaking Speed: 100 to 1800 rpm

12: 24-Well Plate Stacking Rack

13: 24-Well Magnetic Rack

14: 24-Well Thermal Cycling Block

- Sample Capacity: 24 $\times$ 0.2 mL
- Temperature Range: 4.0-99.9°C (minimum setting increment: 0.1°C)

15: Temperature Control Block For Sample Storage

- Temperature Range: 4°C ~ 110°C

16: Waste Bin

■ NGS Reagent Portfolio

Faster workflows for better libraries

Bioer NGS Library Preparation Kits are designed for seamless use with the PrepFlex 100 Automated Liquid Handling Workstation, offering automation-friendly reagents that improve library yield, quality, and reproducibility. The kits support DNA library preparation, magnetic bead cleanups, and hybridization capture for both target enrichment and whole-exome sequencing, and are compatible with FFPE tissues, blood, and cfDNA. They accommodate both enzymatic fragmentation and mechanical shearing.

Combined with Bioer's automated platform, these reagents reduce hands-on time, minimize human error, and standardize workflows, enabling consistent NGS libraries for applications such as early cancer screening, companion diagnostics, reproductive genetics, and genomic research.

🎯 DNA Library Preparation Kits

The kit is specifically developed for illumina high-throughput sequencing platforms and utilizes an enzymatic fragmentation-based library preparation method. Compared with traditional library construction workflows, it employs high-quality fragmentation enzymes, eliminating the need for sonication. The workflow is streamlined by combining fragmentation, end-repair, and 3' adenylation into a single step, significantly reducing library preparation time and cost.

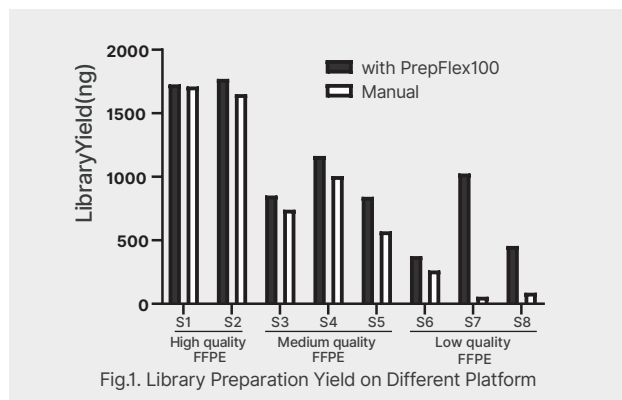
Principle:



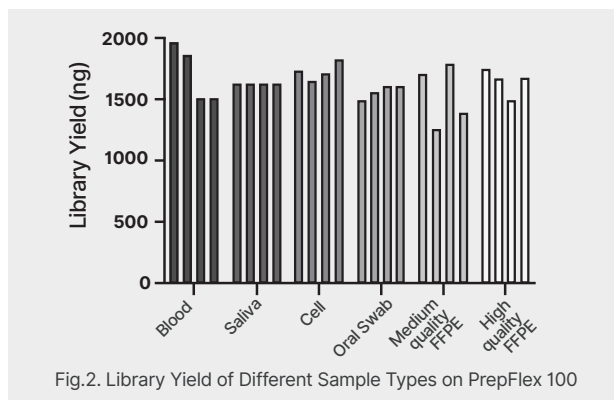
Product Features:

- ✓ Excellent data quality from low-input DNA (1 ng to 1 µg).
- ✓ Automated preparation of 24 libraries in under 4 hours.
- ✓ Compatible with diverse sample types including gDNA, FFPE, and cfDNA.
- ✓ Seamless integration with PrepFlex 100 liquid handling workstation for high-throughput applications.

Performance Data:



- Different quality FFPE samples can be used as inputs for the kit.
- PrepFlex 100 delivers superior performance in library preparation compared with manual workflows, especially for low-quality FFPE samples.



- Libraries were prepared from 250ng of Human sample, The BioseqFlex Universal FS DNA Library Preparation Kit I performs efficiently across various sample types.

🎯 Hybrid Capture Panel

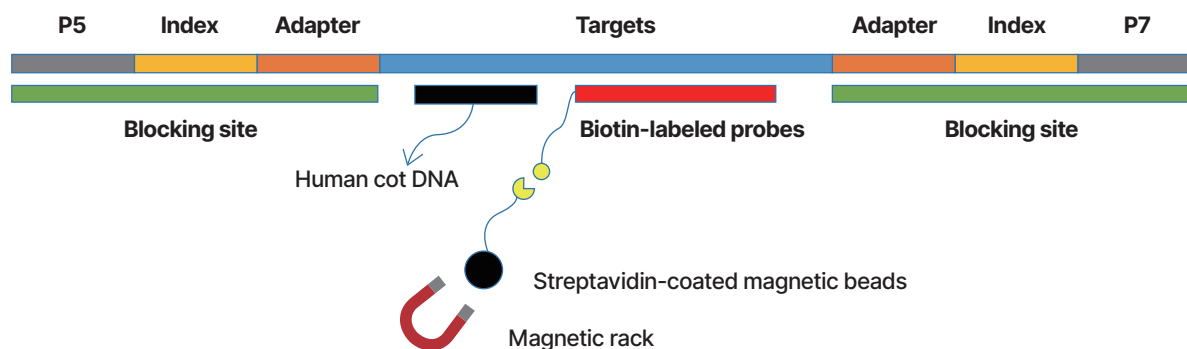
This hybridization capture kit is designed for libraries compatible with Illumina high-throughput sequencing platforms. The kit includes hybridization buffer, elution buffer, human genomic repetitive sequence blocking reagent, illumina library adapter blocking reagent, capture magnetic beads, PCR amplification reagents, and PCR primers.

With excellent sensitivity and specificity, it can be widely applied to research on pathogenic genes related to complex diseases, as well as in health screening and other fields.

All reagents provided in this product have undergone rigorous quality control and functional validation, ensuring maximum reproducibility of library preparation and stable performance across batches.

Principle:

Hybridization capture, also referred to as target enrichment, is a powerful strategy for selective sequencing of predefined genomic regions. Genomic DNA is randomly fragmented and ligated with sequencing adapters to generate libraries. Biotinylated oligonucleotide probes, designed to complement the target regions, hybridize specifically with these fragments. The probe–target complexes are subsequently isolated through the high-affinity biotin–streptavidin interaction using magnetic beads, thereby enriching the desired sequences and enhancing the efficiency and accuracy of downstream NGS analysis



Product Features:

- ✓ **Ready-to-Use Panels:** Predesigned tumor panels covering up to 750 genes, simplifying workflow setup while ensuring broad coverage of key targets.
- ✓ **Ultra-Fast Hybridization:** Supports rapid hybridization in as fast as 2 hour, allowing hybridization and capture to be completed within a single day.
- ✓ **High Capture Efficiency and Uniformity:** Delivers excellent on-target capture rates and coverage uniformity, ensuring reliable and consistent sequencing performance.
- ✓ **Flexible Sample and Probe Compatibility:** Compatible with 1–24 samples per run and adaptable to various capture probe sets, offering maximum flexibility for different laboratory needs.

Performance Data:

Library preparation was performed using FFPE-derived gDNA with PrepFlex 100 in combination with the BioseqFlex NGS Hybridization Capture Kit I. Hybrid-capture was conducted for 1-plex to 24-plex FFPE libraries, with input amounts ranging from 500 ng (1-plex) to 12,000 ng (24-plex). Universal Blocking Oligos (for Illumina) were used as adapter-blocking sequences. Sequencing was carried out on the NovaSeq 6000 platform with PE150 read configuration.

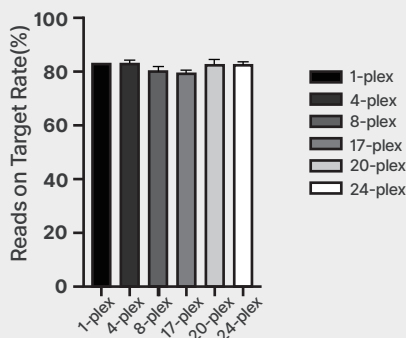


Fig.3 Hybridization capture reads on target rate

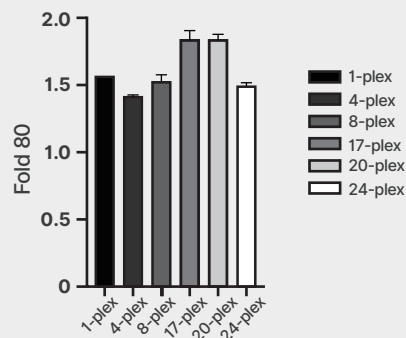


Fig.4 Hybridization capture uniformity

Using the Human Hybrid Capture Panel (150 genes), the results showed that for all plexes (1 to 24), the capture efficiency was consistently high at 75%, and the Fold 80 was below 2.0, demonstrating both high capture efficiency and high capture uniformity.

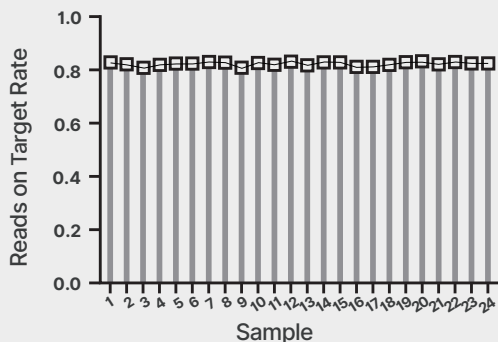


Fig.5 Hybridization capture reads on target rate

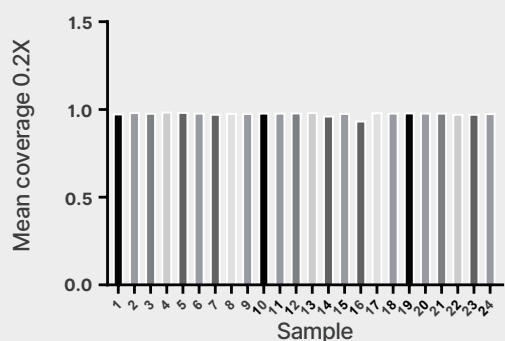
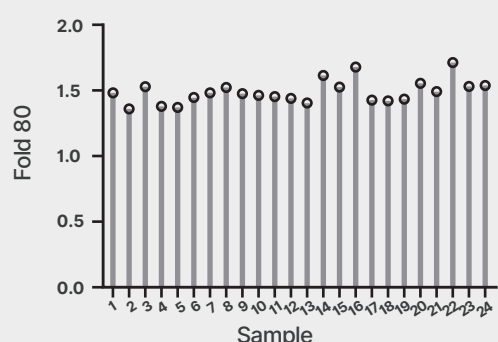


Fig.6 Hybridization capture uniformity

Using the Human Hybrid Capture Panel (150 genes), the Bioer reagent demonstrated strong on-target performance and highly uniform target enrichment across all 24 samples. Capture efficiency consistently exceeded 75%, while the Fold-80 base penalty remained around 1.5, indicating excellent coverage uniformity. Moreover, the on-target rate at 0.2× mean depth surpassed 95%, reflecting reliable and efficient hybrid-capture performance across the entire panel.

■ PrepFlex 100 Performance Specification

✓ Product Name	✓ Automated Liquid Handling Workstation
Model	PrepFlex 100
Touchscreen	10.1 inch
Sample Throughput	24 samples/run
Deck Position	16
Pipetting Channels	Single-channel, Eight-channel
Robotic Arm	1
Pipette Range	Single-channel (1~1000ul) Eight-channel (fixed channel spacing, 1~200ul)
Pipette Repeatability (single channel)	5μL: ≤4% (50μL Pipette Tip) 20μL: ≤1.5% (50μL Pipette Tip) 100μL: ≤0.75% (200μL Pipette Tip) 300μL: ≤0.75% (1mL Pipette)
Pipette Accuracy (single channel)	5μL: ≤5% (50μL Pipette Tip) 20μL: ≤2.5% (50μL Pipette Tip) 100μL: ≤2.0% (200μL Pipette Tip) 300μL: ≤2.0% (1mL Pipette Tip)
Contamination Methods	HEPA System and UV Lamp
Program Storage	>1000
Certificate	EMC/LVD
Dimensions	945mm(L) × 715mm(D) × 885mm(H)
Weight	130KG
Power Supply	100-240V, 50/60Hz, 1200W

■ NGS Reagents List

✓ Cat. No.	✓ Product Name	✓ Package
BSQ10	BioseqFlex NGS DNA Clean Beads	5mL/60mL
BSQ11	BioseqFlex Unique Dual Index for Illumina, 96 Index	96×1T
BSQ15	BioseqFlex Universal FS DNA Library Preparation Kit I	24T/96T
BSQ16	BioseqFlex Universal DNA Library Preparation Kit I	24T/96T
BSQ19	BioseqFlex NGS Hybridization Capture Kit I	24T/96T
BSQ20	Human Hybrid Capture Panel (150 gene)	24T
BSQ21	Human Hybrid Capture Panel (750 gene)	24T
BSQ22	Human Hybrid Capture Panel (HRD/HRR gene)	24T
BSQ24	Human Hybrid Capture Panel (WES)	24T

■ PreFlex 100 Compatible Consumables

✓ Cat. No.	✓ Product Name	✓ Pack Size	✓ Unit
BSH138R1-FLS	50μL Filtered Pipet Tp (B)	96 pieces/rack, 50 racks/box	rack
BSH118R1-FLS	200μL Filtered Pipet Tp (B)	96 pieces/rack, 50 racks/box	rack
BSH119R1-FLS	1000μL Filtered Pipet Tp (B)	96 pieces/rack, 50 racks/box	rack
BSH135S1C-L	Hard-Frame 0.2 ml 24 Well semi-Skirted PCR Plate	25 pieces/box, 12 boxes/case	box

WWW.BIOER.COM



Add: 1192 BinAn Rd., Binjiang District, Hangzhou, Zhejiang, 310053, China

Tel: +86-571-87774575 E-mail: overseas@bioer.com.cn

Fax: +86-571-87774553 Http: [//www.bioer.com](http://www.bioer.com)

After-sales service: +86-571-87774558

