

The Complete Sample-to-Answer Solution for NGS Library Prep

Fast, Flexible, Complete

The Apollo 324™ NGS Library Prep system is a compact and robust platform that enables rapid and full walk-away automation of a wide variety of next generation sequencing applications. Paired with the PrepX™ reagents, the Apollo 324™ line offers a complete sample-to-answer solution for robust NGS library prep.

Apollo 324™ automated protocols and PrepX™ reagent kits combine precise liquid handling and proven chemistries to produce high quality libraries for all major NGS platforms. PrepX™ reagent kits are designed specifically for ease-of-use with Apollo automated protocols, minimizing hands-on time and improving reproducibility compared to manual methods.



Plug-And-Play Automation

The Apollo 324™ NGS Library Prep system is a compact benchtop platform that allows researchers to achieve excellent precision and reproducibility.

Unlike other platforms that require extra accessories such as external pumps, or a compressed air supply, the Apollo 324™ has a small footprint that minimizes space requirements, making integration into a research or clinical lab as easy as plug-and-play.

The Apollo 324™ system is fully enclosed with a locking door to minimize environmental contamination. The standardized, 8-position deck allows for efficient heating, cooling, and waste management (Figure 1). Multiple peltiers accommodate long incubation steps and allow the researcher to run protocols overnight. A built-in robotic arm minimizes the axes of motion, reducing the possibility of hardware crashes during a run and increasing run-to-run reproducibility.

Apollo disposable tips are carefully designed and validated to ensure optimal liquid handling performance. Cross contamination is eliminated with filter tips, making the system ideal for PCR preparation and purification applications. Disposable tips have the added benefit of reducing run time by eliminating time-consuming wash steps.

With a simple plug-and-play design, the Apollo 324™ system can be easily integrated into any research setting, from core facilities to clinical laboratories.

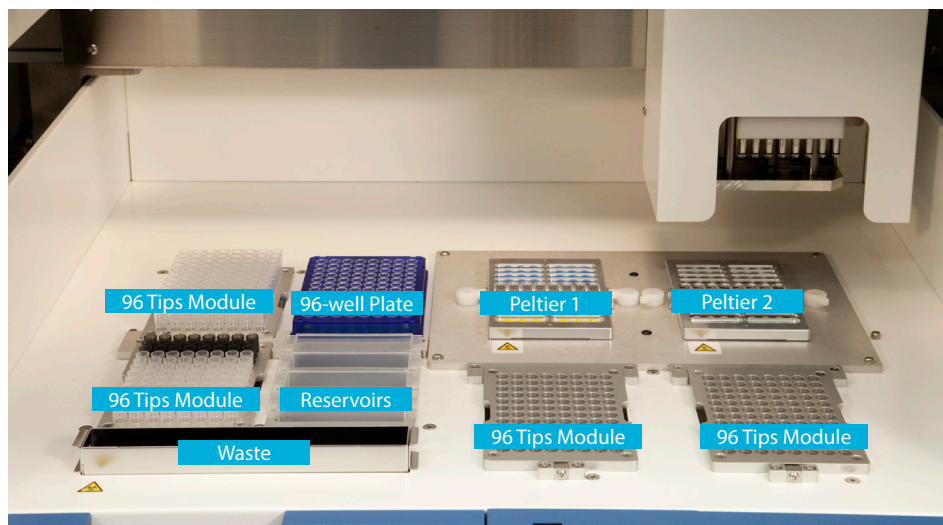


Figure 1. Apollo 324™ work surface. The Apollo 324 compact footprint minimizes space requirements.

In-Tip Bead Separation

A key feature of the Apollo 324™ NGS Library Prep System is the use of In-Tip magnetic bead capture for purification. Other systems require movement of the sample plate onto a magnet, collection of beads within the reaction well and removal of the plate from the magnet for elution. This extra plate movement is time consuming and can result in run crashes due to plate misplacement. Poor placement of the plate on the magnet can also result in higher bead carryover and lower yields. With the Apollo 324™ System, a retractable bar magnet traps beads against the side of the specially designed pipette tip (Figure 2). This precise control of the beads and solution in the tip improves yield and reproducibility. Bead capture can be completed in as fast as 1 minute, allowing for an entire purification protocol to be completed in less than 15 minutes.

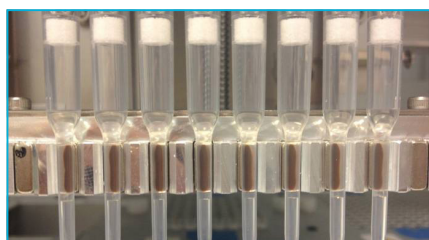


Figure 2. In Tip bead purification. Beads are captured within the specially designed cylindrical tips.

Easy Step-by-Step Setup

The Apollo 324™ system's easy-to-use touchscreen walks you through each step of the protocol setup. Users select the desired protocol from the intuitive graphical user interface (Figure 3A). More than 20 protocols are preinstalled on each Apollo 324™ system. Color-coded layouts on the screen match the color-coded PrepX™ reagent strips, so even inexperienced operators can set up runs without error (Figure 3B). A real-time status bar counts down elapsed time, allowing researchers to find out process time at-a-glance.

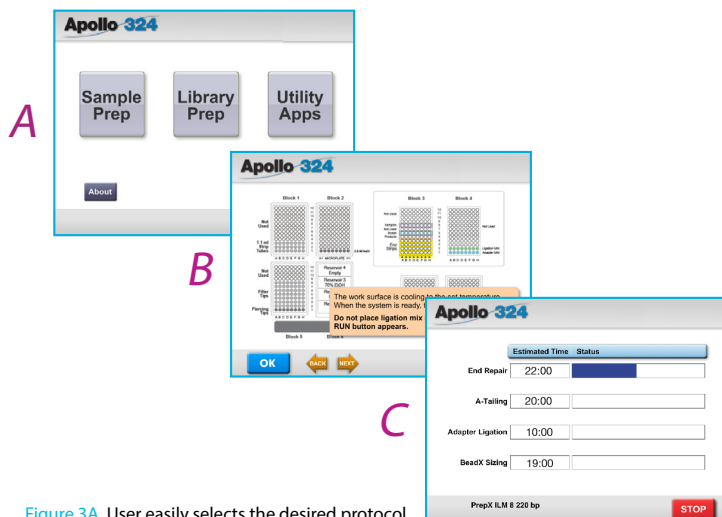


Figure 3A. User easily selects the desired protocol. 3B. The touchscreen walks the user through each step of the protocol setup. 3C. A real-time status bar counts down elapsed time.

Apollo Protocols - Key Features

- Full Walk-Away protocols
- Preconfigured reagent strips for flexible batch size
- Up to 96 libraries in 1 day
- Intuitive graphical user interface
- Open, customizable system for custom assay development
- More than 20 preinstalled protocols
- Validated protocols and reagent kits

Validated Reagent Kits

PrepX™ reagent kits are carefully designed for optimal performance with Apollo 324™ automated protocols. Kits are available for a wide variety of applications, from whole genome to transcriptome sequencing for both Illumina as well as Ion Torrent sequencers. Using In-Tip bead-based size selection, library sizes can be tailored for different application needs (Figure 4).

PrepX™ reagent kits have reaction volumes optimized for Apollo 324™'s precise liquid handling to ensure reproducibility. During development, each PrepX™ reagent kit is validated by library preparation and sequencing, ensuring the highest level of performance. Each lot is produced under stringent quality control standards and undergoes verification and testing.

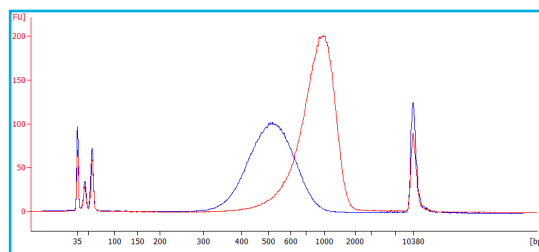


Figure 4. The PrepX ILM protocols are optimized for a variety of insert sizes to match the increasing read lengths of NGS sequencers.

Reagent Strips for Ultimate Flexibility

PrepX™ reagents are designed specifically for ease-of-use with Apollo automated protocols. Reagent strips are color-coded with a directional arrow, making run setup quick, easy and error-free (Figure 5). The single-use strips are prealiquotted with the necessary volume for each sample, giving the user flexibility to prepare any number of samples per run. Other systems use reagent kits that are not configured for automation, which results in excessive reagent waste due to dead volume.

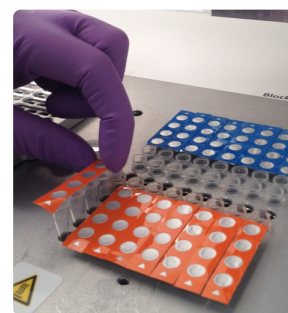


Figure 5. Reagent strip setup on the Apollo 324™.

Multiple Configurations to Fit Your Study Needs

The expanding portfolio of the Apollo system supports the rapidly growing number of NGS applications. Our expert team of scientists continues to partner with the scientific community to develop new applications to meet your future NGS needs (Table 1).

Apollo protocols are available in variable throughput configurations designed to fit your study needs:

- Low Throughput: process from 1 to 8 samples per run with only 15 minutes of hands-on time
- High Throughput DNA Protocols: process from 4 to 32 samples per run with only 30 minutes of hands-on time

Apollo 324™ Pre-installed Protocols						
Protocol	Throughput	Sequencer	Reagent Kit	Samples Per Kit	Run Time on the Apollo 324™	Hands-on Time
DNA						
PrepX ILM <ul style="list-style-type: none"> • 220 bp • 320bp • 520 bp • 870 bp 	1 to 8 samples	Illumina	PrepX Complete ILMN DNA Library Kit	24	1 hr 20 min	15 min
PrepX ILM 32i <ul style="list-style-type: none"> • 220 bp • 320bp • 520 bp • 870 bp 	4 to 32 samples	Illumina	PrepX Complete ILMN 32i DNA Library Kit	96	3 hr 20 min	15 min
PrepX PGM 8 <ul style="list-style-type: none"> • 100 bp 	1 to 8 samples	Ion Torrent	PrepX PGM DNA Library Kit	24	3 hr 1 min	15 min
PrepX PGM 8 <ul style="list-style-type: none"> • 200 bp 	1 to 8 samples	Ion Torrent	PrepX PGM DNA Library Kit	24	1 hr 9 min	15 min
RNA						
PrepX PolyA 8	1 to 8 samples	All	PrepX PolyA mRNA Isolation Kit	96	45 min	15 min
PrepX PolyA 48	6 to 48 samples	All	PrepX PolyA mRNA Isolation Kit	96	3 hr 15 min	15 min
Ribo-Depletion 8	1 to 8 samples	All	<i>Compatible with Epicentre's Ribo-Zero Magnetic kits</i>		1 hr 30 min	15 min
PrepX mRNA 8 <ul style="list-style-type: none"> • 100 bp • 200 bp 	1 to 8 samples	Illumina	PrepX RNA-Seq for Illumina, 24 Samples	24	5 hr	15 min
PrepX mRNA 48 <ul style="list-style-type: none"> • 200 bp 	6 to 48 samples	Illumina	PrepX RNA-Seq for Illumina, 48 Samples	48	6 hr 15 min	15 min
PrepX Small RNA 8	1 to 8 samples	Illumina	PrepX Small RNA for Illumina, 24 Samples	8	4 hr 45 min	15 min
PrepX Small RNA 48	6 to 48 samples	Illumina	PrepX Small RNA for Illumina, 48 Samples	48	4 hr 5 min	15 min
PrepX SPIA	1 to 8 samples	Illumina, Ion Torrent	PrepX SPIA, 24 Samples	24	5hr 19 min	15 min
ChIP-Seq (Library Preparation)						
PrepX ILM ChIP-Seq	1 to 8 samples	Illumina	PrepX ChIP-Seq DNA Library Kit	24	1 hr 10 min	15 min
Utility Applications						
PCR Cleanup 8	1 to 8 samples	All	N/A	N/A	16 min	5 min
PCR Cleanup 32	4 to 32 samples	All	N/A	N/A	50 min	5 min
PCR Cleanup 48	6 to 48 samples	All	N/A	N/A	1 hr 30 min	5 min
Custom Scripts (Available upon request)						

Table 1. Apollo 324™ preinstalled protocols.

System Specifications

Temperature Control	2 Peltier blocks (4-95 ° C), PID regulated
Handling Volume Ranges	5-260 µL
Format	Tube and 96-well plate formats (SBS conforming)
Dimensions	WxDxH: 32 in. x 29 in. x 27 in. Weight: 201 lb (91 kg)
Power Requirements	100-240V AC, 50/60 Hz, 300 W, 120 V
Product Safety and Compliance	CE mark

Ordering Information

System and Service	Part Number
Apollo 324™ NGS Library Prep System	100007
Service Contract, 1 year	200002
PrepX™ Reagent Kits	Part Number
PrepX Complete ILMN DNA Library Kit	400075
PrepX Complete ILMN 32i DNA Library Kit	400076
PrepX Complete ILMN Barcodes 1 - 24	400077-1
PrepX Complete ILMN Barcodes 24 - 48	400077-2
PrepX Complete ILMN Barcodes 49 - 72	400077-3
PrepX Complete ILMN Barcodes 73 - 96	400077-4
PrepX Complete ILMN Barcodes 1 - 96	400077-5
PrepX PGM DNA Library Kit	400029
PrepX 454 DNA Library Kit	400008
PrepX RNA-Seq for Illumina, 24 Samples	400039
PrepX RNA-Seq for Illumina, 48 Samples	400046
PrepX PolyA mRNA Isolation Kit	400047
PrepX Small RNA for Illumina, 24 Samples	400073
PrepX Small RNA for Illumina, 48 Samples	400074
System Consumables	Part Number
Apollo PCR Tubes	300019
Apollo Caps for PCR Tubes	300029
Apollo Filter Tips	300027
Apollo Piercing Tips	300028
Apollo Microtiter Plates	300026
Apollo Reagent Reservoirs	300031
Apollo 1.1 mL Minitubes	300033

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Enabling clinical sequencing through complete coverage



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