Reagent Kit Selection Guide

Reagent Kit Selection Guide (From Target Nucleic Acids)

Target	Type	Origin	Scale	Reagent Kits
DNA	Total DNA	Human, animal blood (fresh, old, dried, frozen whole blood with common anticoagulants, Buffy Coat	100-400 µl whole blood	AnaPrep Blood DNA Extraction Kit 200
			400-1000 µl whole blood	AnaPrep Blood DNA Extraction Kit 1200 *especially for the granulocytes-rich blood samples (white blood cell no. more than $2x10^4$ cells/µl)
DNA	Virus	Whole Blood	100-400 µl whole blood	AnaPrep Blood DNA Extraction Kit 200
DNA/RNA	Virus	Cell culture supernant, human serum, plasma, urine, cerebrospinal fluid, and other cell-free body fluids	See Reagent Handbook	AnaPrep Viral Nucleic Acid Extraction Kit
DNA	Virus/ Bacteria	Genital tract specimen (collected by cervical brush or genital swab), cervicovagina lavage, urine specimens	See Reagent Handbook	AnaPrep HPV DNA Extraction kit for swab samples
DNA	Total DNA	• Human and animal tissue (fresh and frozen tissues), Rodent tails • Insects (fresh and frozen tissue) • Dried blood • Dried Swab Material (buccal, nasal, pharyngeal, vaginal, eye swab or saliva)	See Reagent Handbook	AnaPrep Tissue DNA Extraction Kit
DNA	Total DNA	FFPE (formalin fixed paraffin embedded) tissue sections	See Reagent Handbook	AnaPrep FFPE DNA Extraction Kit
DNA	Total DNA	Cell culture, plasma, serum, bone marrow, buffy coat (fresh or frozen serum/plasma, cells in adherent/suspension culture, lavage)	See Reagent Handbook	AnaPrep Cultured Cell DNA Extraction Kit
DNA	Bacteria	Bacteria species (from different kinds of starting materials), bacteria pellets, liquid transport media, swabs and urine, colony	See Reagent Handbook	AnaPrep Bacterial DNA Extraction Kit *Special item: AnaPrep TB DNA Extraction Kit
DNA	Total DNA	Forensic material (whole blood, clotted blood, bones, teeth, ancient bones, hair roots, forensic surface and contact swabs, saliva, chewing gum, cigarette butts, stamps, envelops, tissue, etc.)	See Reagent Handbook	AnaPrep Forensic DNA Extraction Kit

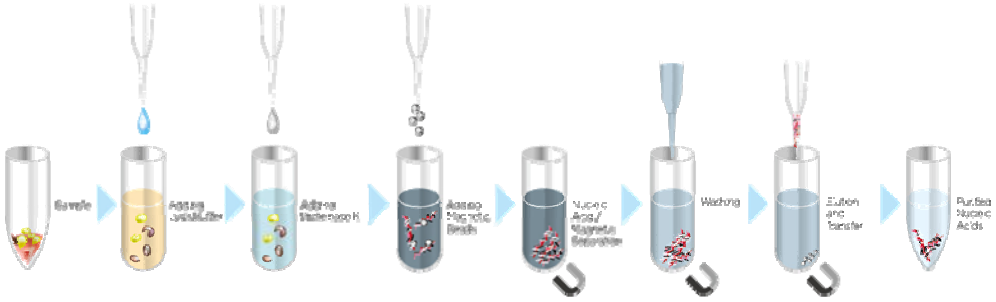
Introduction

The BioChain Nucleic Acid Preparation Technology

Introduction

BioChain Institute Inc. specializes in developing advanced, efficient and reliable technologies in nucleic acid preparation, to enable successful delivery of extraction results from varied sample types.

The AnaPrep technology is a state of the art platform that uses magnetic beads to extract nucleic acids from samples. The platform commits to a truly walk-away automation for nucleic acid purification from samples to results. The purification processes contain steps of lysis, binding, washing and elution (see figure below).



magnetic bead extraction process

Product information

Intended use

AnaPrep Kits are intended to be used on the AnaPrep 12 instrument for the preparation of nucleic acids from biological specimens. The AnaPrep instrument and AnaPrep kit are not intended for use as part of a specific in vitro diagnostic test.

The nucleic acids purified using the AnaPrep 12 instrument and reagent kits are suitable for a variety of polymerase chain reaction (PCR) tests. The AnaPrep 12 instrument and reagent kits are intended for research use only.

Warranty

BioChain is committed to providing our customers with high-quality products and services. Our goal is to ensure that every customer is 100% satisfied with our products and services. If you have questions or concerns about our product or services, contact our Technical Support Representatives.

BioChain guarantees the performance of all products according to specifications stated on our product literature. The purchaser/user must determine the suitability of the product for its particular use. We reserve the right to change, alter, or modify any product to enhance its performance and design.

This warranty limits BioChain Institute's liability only to the cost of the product. No warranty is granted for products beyond their listed expiration date. No warranty is applicable unless all product components are stored in accordance with instructions**.**

Satisfaction Guarantee	For any product that fails to perform satisfactorily due to any reason other than misuse, BioChain will replace it free of charge. Simply call BioChain or your distributor to get a replacement.
Technical Support	For technical assistance and more information, please visit our website at www.biochain.com or call the BioChain Technical Service Department or your local distributors.
Safety Information	When working with chemicals or samples, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDS). You can find, download, view, and print them from our website www.biochain.com.
Manufacturer Information	**Manufacturer:** BioChain Institute Inc. **Address:** 39600 Eureka Dr. Newark, CA 94560, USA **Tel:** 1-510-783-8588 **Fax:** 1-510-783-5386 **Mail:** info@biochain.com **Country of Origin:** **USA**

AnaPrep TB DNA Extraction Kit

Cat. No. Z1322008 Process Time: 60 minutes

Intended use

The AnaPrep TB DNA Extraction Kit is used with the AnaPrep 12 instrument for genomic DNA extraction of *Mycobacteria* spp. (e.g. *Mycobacterium tuberculosis*) from a different specimen.

Application

Nucleic acids extracted from the TB DNA Extraction kit can be used in a number of downstream applications including: PCR, qPCR, Sequencing (NGS), Microarray, RFLP, and Southern Blot Analysis.

Number Of Tests

48 extractions

Kit Components

Kit Contents	Z1322008-48
Reagent Cartridge	48 pcs
Reaction Chamber	48 pcs
Tip Holder	48 pcs
Filtered Tip	50 pcs
Piercing Pin	50 pcs
Sample Tube (2 ml)	50 pcs
Elution Tube (1.5 ml)	50 pcs
Buffer BL3 (25 ml)	1 pc
Barcode Paper	1 pc

Reagent Cartridge Content

well-1	Proteinase K solution	40 µl
well-2	Lysis Buffer 2	720 µl
well-3	Binding Buffer 1	720 µl
well-4	Magnetic Bead Solution	800 µl
well-5	Washing Buffer 1	1000 µl
well-6	Washing Buffer 2	1000 µl
well-7	Washing Buffer 3	1000 µl
well-8	Elution Buffer 1	1000 µl
well-9	Elution Buffer 2	1000 µl
well-10	Buffer N1	300 µl

Storage

- The AnaPrep TB DNA Extraction Kit should be stored at room temperature (15-25 °C). Do not freeze the reagent cartridges. The Kits are stable for 12 months under the proper storage conditions.
- Store the purified DNA at 4°C (short- term) or aliquot and store at -70°C (long-term).

Starting Material

- Clinical specimen: Sputum, BAL, Pas, blood, cell-free body fluids, urine and other respiratory specimens.
- Bacterial culture in solid and liquid media.

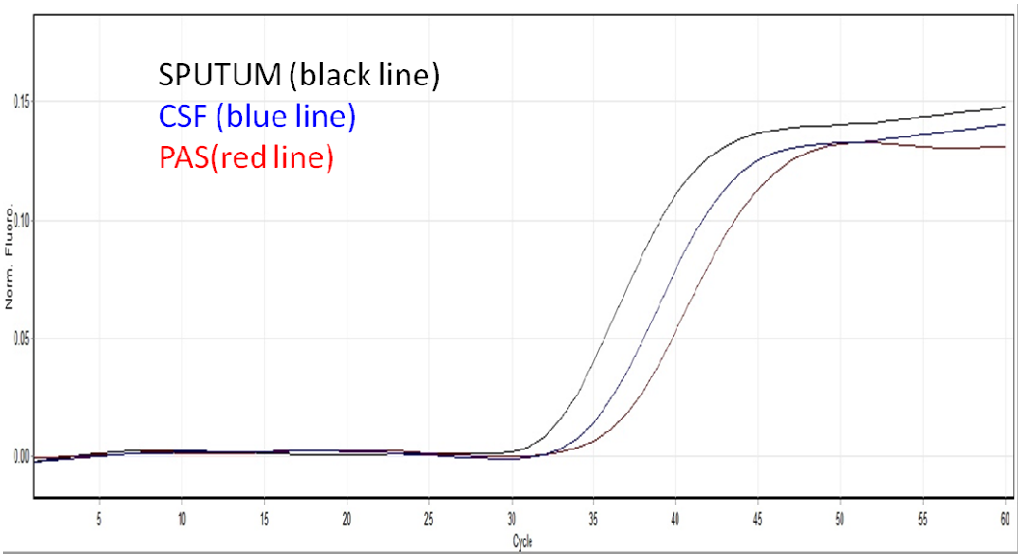
Sample preparation

Specimen type	Procedure
Sputum/BAL or other Respiratory Specimen	1. Prepare a fresh DTT stock solution for liquefaction * (e.g., 5× conc. DTT stock is about 0.75%) 2. Adjust the final DTT concentration in the sample to 0.15% by adding DTT stock solution. 3. Votex the sample or incubate at 37°C until it can be pipetted easily. 4. Pellet the bacteria by centrifuging at ≥ 3000 x g for 15 min. 5. Discard supernatant, resuspend the pellet in 200 µl Buffer BL3, and then mix by votexing for about 5 sec. 6. Take 200 µl of the sample to the sample tube for extraction. * The liquefaction could be done by using other solutions, such as NALC （N-Acetyl-L-Cysteine） -NaOH or other agents which could digest mucous material.
Viscous body fluid e.g. Pas	See the procedure for “Sputum/BAL or other Respiratory Specimen”.

Specimen type	Procedure
Cell-free body fluid e.g. CSF, urine	1. Pellet the bacteria by centrifugation at 14000 x g for 15 min. 2. Discard the supernatant, resuspend the bacterial pellet in 200 µl Buffer BL3, and Votex for about 5 sec. 3. Take 200 µl of the sample to the sample tube for extraction.
Liquefied, decontaminated sample	See the procedure of “cell-free body fluid”.
Blood or Blood-contaminated sample	1. Add cold sterilized water to the sample and adjust the ratio of water/blood to about 3:1. 2. Mix by inverting several times. 3. Incubate at 4°C, for at least 10 min. 4. Centrifuge at 14000 x g for 15 min. 5. Remove the supernatant, add 200 µl buffer BL3, and then votex for about 5-10 sec. 6. Take 200 µl of the sample and add to the sample tube for extraction.
Colony from solid culture	1. Pick 1-3 colonies, mix with 200 µl Buffer BL3, and then votex for about 5-10 sec. 2. Take 200 µl of the sample and add to the sample tube for extraction.
Liquid culture	1. Take 1 ml culture ($>$McFarland 0.5), and transfer it to a 1.5 ml microcentrifuge tube. 2. Pellet the bacteria by centrifuging at 5000 x g for 5 min. 3. Discard the supernatant, resuspend the bacterial pellet in 200 µl Buffer BL3, and then Votex for about 5-10 sec. 4. Take 200 µl of the sample and add it to the sample tube for extraction.

Result

The AnaPrep TB DNA Extraction kit was used to isolate DNA from clinical specimens (sputum, CSF and pas). 100ml of the sample used for extraction and collected 100 ml eluate. Analysis was then performed by real-time qPCR with Taqman probe /primer (IS6110). In the cell-free body fluid (CSF) and blood contaminated sample (Pas), TB DNA can be detected after extraction. This shows the excellent sensitivity of the isolation procedure.



Expected Purity and Yield

DNA yields depend on the sample type, number of bacteria in the sample, and the protocol used for purification of DNA.

Quality Control

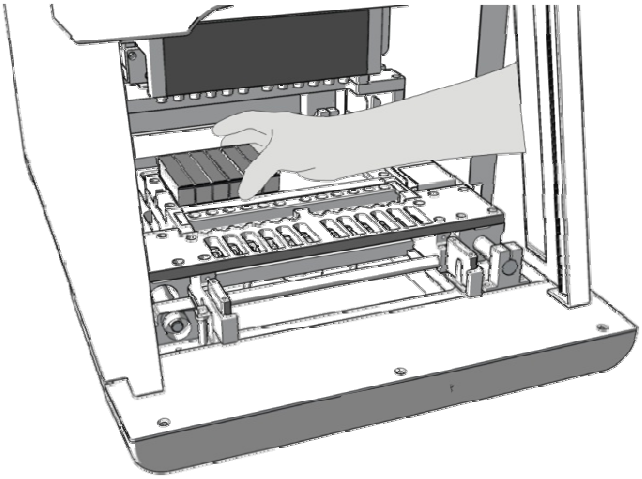
In accordance with BioChain's ISO-certified Quality Management System, each lot of the AnaPrep TB DNA Extraction Kits are tested to ensure consistent product quality.

Protocol of extraction

1. Turn the power switch on and wait for the LCD screen to light up and display “AnaPrep 12 System Stand-By”.
2. Press the “Start” button
   (The system will process self-testing, and then go to steady mode).
   Note:
   The system will block main functions before the completion of the self-testing process.

3. Open the sliding door and remove the sample rack from the instrument.

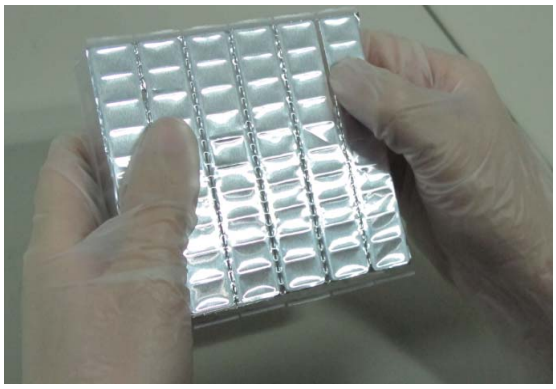
4. Load Reagent Cartridges, and all plastic disposables (Reaction Chamber, Tip Holder, Piercing Pin, and Filtered Tip)

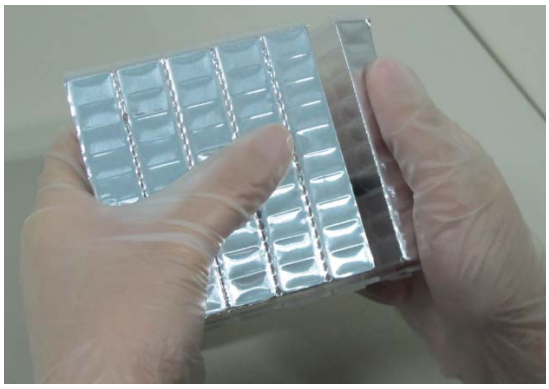


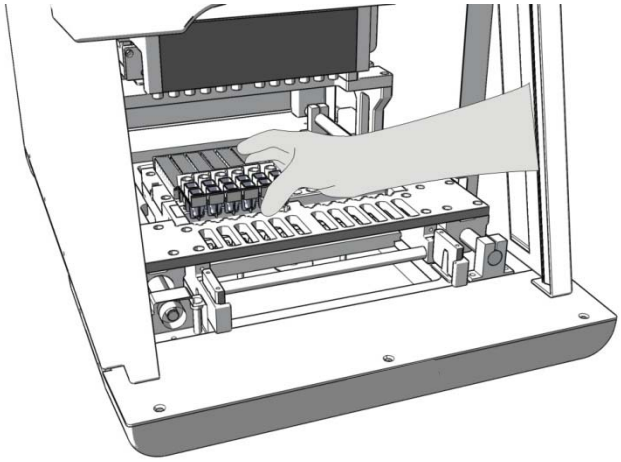
Insert Reagent Cartridges

■ How to pull apart the reagent cartridges

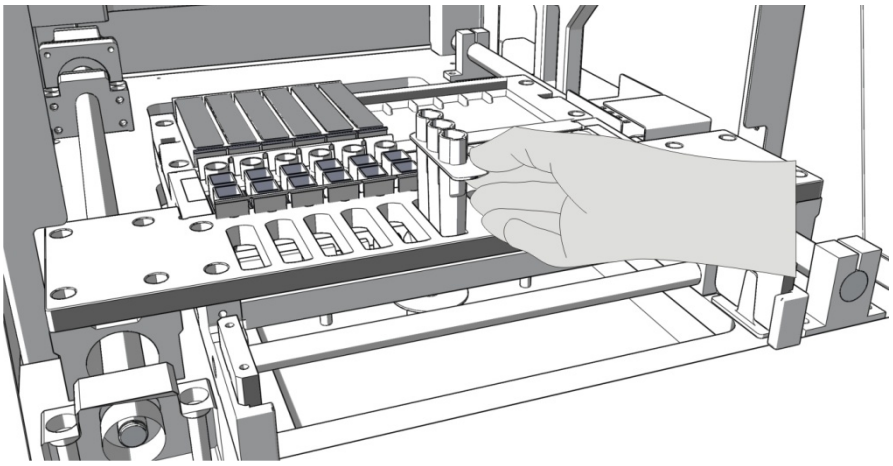
- Cut foil with a finger nail along the dotted line and then snap it apart with a little bit of force.



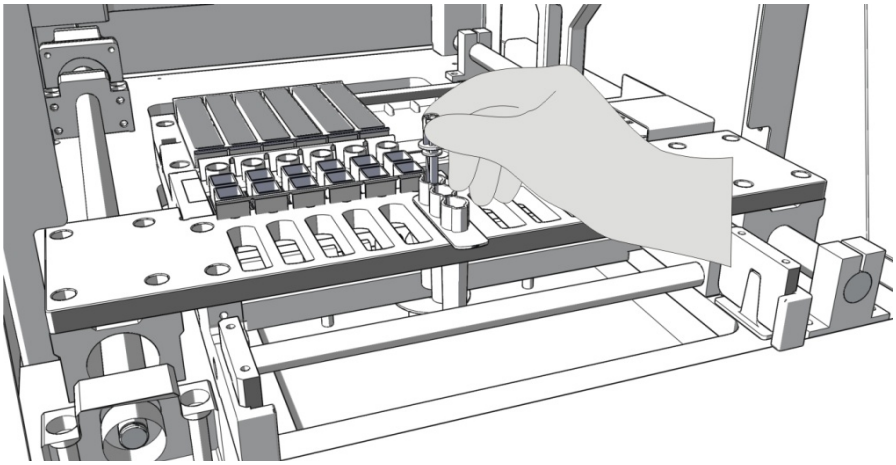




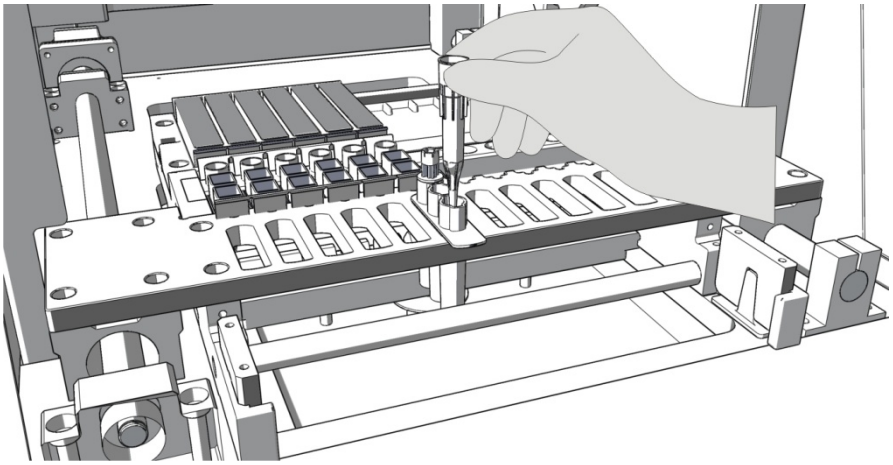
Insert Reaction Chambers



Insert Tip Holder



Insert Piercing Pins



Insert Filtered Tips

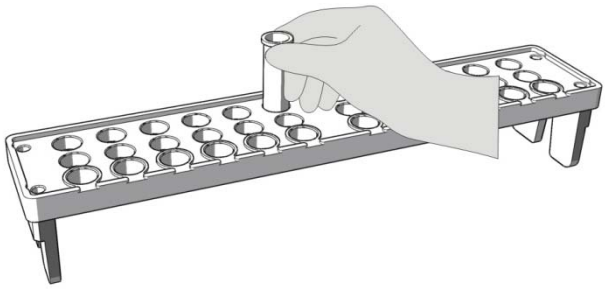
Note:

Load one Reagent Cartridge and one set of plastic disposables per sample.

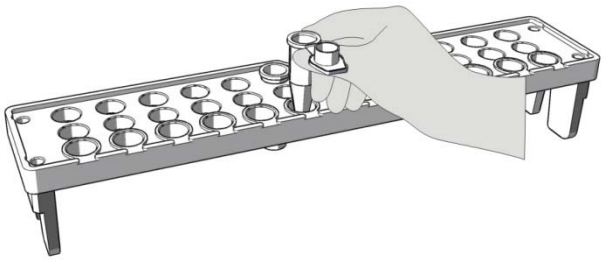
Important:

- Set Reagent Cartridges in the order of the number from left to right.
- Make sure that Cartridges are inserted in to the Cartridge Tray tightly.
- You can load 1-12 cartridges on the tray depending on the number of samples that you wish to process.

5. Load Sample Tube and Elute Tube to Sample Rack on the bench

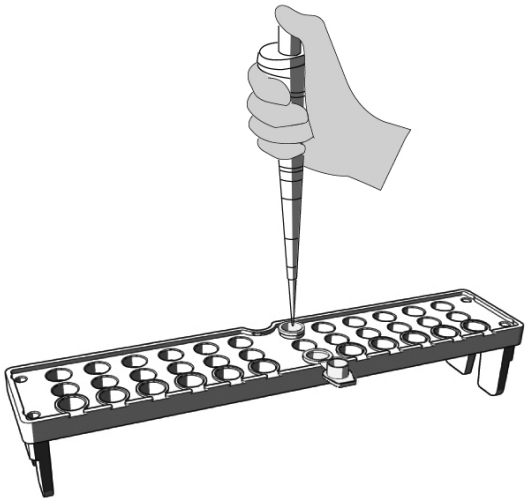


Insert Sample Tube into the Sample Rack



Insert Elute Tube into the Sample Rack

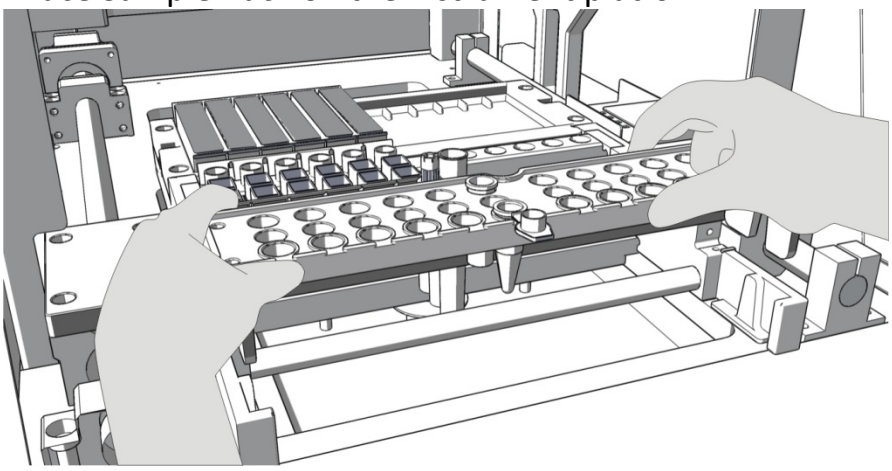
6. Load the sample(s) to Sample Tube.



Note:

- Pretreatments are essential for some sample types before loading to Sample Tube. Please refer to the handbook of reagent kits for details.
- Make sure the caps of Elute Tube are open as the figure shown above.

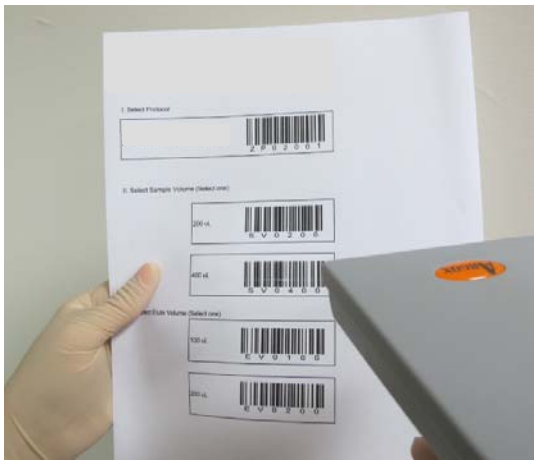
7. Place Sample Rack on the instrument platform



Note:

- Use two hands to handle the Sample Tray.
- Make sure the Sample Tray is placed correctly in the instrument.

8. Close the door.
9. Scan the protocol barcodes to select purification protocol, sample volume and elute volume.



Note:

- There is one protocol barcode paper enclosed in each reagent kit box.
- The protocol's name, sample volume and elution volume will be shown on LCD screen after the protocol barcodes are scanned.

10. Follow the instructions displayed on the LCD screen to double check the operation steps to be completed prior to running the program.
11. Press "Enter" to confirm. The instrument will start running the protocol program automatically and will terminate once all processes are completed.

    Note:

    - It takes 30 to 45 minutes to complete the extraction process and may vary according to reagent types.

12. At the end of the run, the instrument beeps briefly while the LCD screen displays "Protocol Completed".
13. Open the instrument door.
14. Remove the elute tubes containing the purified nucleic acids.
    Note: Store the purified nucleic acids at 4°C for short-term storage or store at -70°C for long-term storage.
15. Discard the used cartridges and all plastic consumables into the

biohazard waste. Do not reuse the cartridges

16. If you're not using the instrument, place the Sample Rack back into the AnaPrep, close the instrument door and press the "Start" button for 2 seconds to enter into "sleep mode".
    If the instrument will not be used for a longer period of time turn the power switch off.

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