

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 2×10^4 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	<ul style="list-style-type: none"> 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

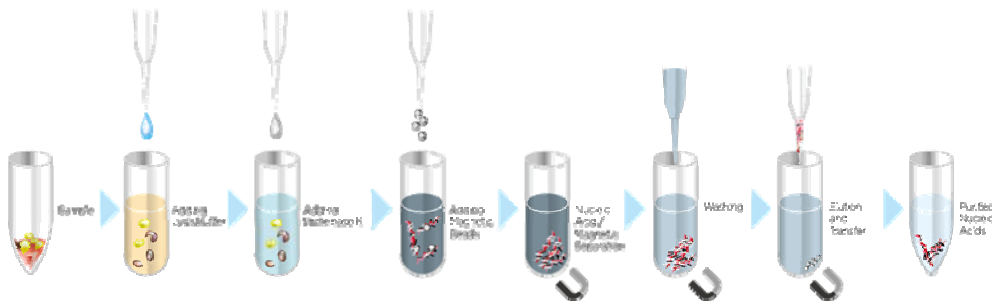
Introduction

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 kits 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 Tissue DNA Extraction Kit

Cat. No. Z1322004

Process Time: 45 minutes

Intended Use AnaPrep Tissue DNA Extraction Kit is used with the AnaPrep 12 or 24 instruments for extraction of genomic DNA from a variety of animal tissues, swab samples and blood stains.

- **For extraction from FFPE samples, using “Z1322009 AnaPrep FFPE DNA extraction kit” is recommended**

Application Nucleic acids extracted from the AnaPrep Tissue 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	Z1322004-48
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
Proteinase K (1 mL, 10mg/mL)	1 pc

Buffer BL2 (25 mL)	1 pc
Barcode Paper	1 pc

Reagent Cartridge Content



Well 1 Well 2 Well 3 Well 4 Well 5 well 6 Well 7 Well 8 well 9 Well 10

well-1	Empty	
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	Empty	

Storage

- ◆ The AnaPrep Tissue 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

The types and amounts of starting material for use in the AnaPrep Tissue DNA purification procedures are shown in the Table listed below:

Sample Type	Target Nucleic Acid	Sample Volume (Amount of starting material)	Elution Volume
Tissues	DNA	100-400 µl/10-40 mg	100-300 µl
Dried swab samples (e.g. Buccal cells)		100-400 µl/1 swab or brush (add BL2 and Proteinase K to 100-400 µl for extraction)	
Dried blood		100-400 µl/4 discs*	

*A 3mm diameter disc punched out from filter paper stained with dried blood contains white blood cells from approximately 5 µl whole blood; we recommend using 4 punched-out discs as starting material.

Yield of purified DNA

- ◆ DNA yields depend on the sample type, number of nucleated cells in the sample, and the protocol used for the purification of DNA.
- ◆ The table listed below shows DNA yields obtained from different sample types using the AnaPrep extraction procedures.

Table: The DNA yield of different sample types

Sample Type	Sample Amount	Typical DNA Yield
Skeletal muscle	200 µl (40 mg tissue digested)	Up to 9 µg
Heart	200 µl (20 mg tissue digested)	Up to 12 µg
Spleen	200 µl (10 mg tissue digested)	Up to 27 µg
Lung	200 µl (10 mg tissue digested)	Up to 17 µg
Kidney	200 µl (10 mg tissue digested)	Up to 18 µg
Liver	200 µl (10 mg tissue digested)	Up to 40 µg
Buccal cells	1 Swab	1-5 µg
Dried blood	4 x 3 mm diameter discs	0.2-0.5 µg

- ◆ Sample preparation requirements are highly dependent upon the type of starting material. Due to variations in consistency and viscosity, even similar sample types may require distinct handling. The steps below describe some recommendations for processing primary samples.

Sample preparation

For solid animal tissue

1. Transfer tissue ↓	Transfer tissue into a 1.5ml microcentrifuge tube:		
	No.	Sample Type	Recommended Sample Amount
	1	Heart	20 mg
	2	Muscle	40 mg
	3	Other Tissues	10 mg
2. Add BL2 Buffer ↓	Add 100-400 µl provided Buffer BL2. Ensure tissue pieces are fully submerged in Buffer BL2.		
3. Add Proteinase K ↓	Add 20 µl proteinase K solution and mix by vortexing.		
4. Incubate ↓	<p>Incubate at 55°C in a shaking water bath or thermomixer (mix set at 1000 r.p.m.) until the tissue is completely lysed.</p> <p>Note: 1. Lysis time varies depending on the type of tissue processed. Lysis is usually completed in 1-2 hrs. However, lysis overnight is possible and does not influence the preparation. 2. Use the heat block for incubation, vortexing-mix several times during incubation is recommended.</p>		
5. Spin down and Transfer	<p>Spin down and transfer 100-400µl of the supernatant to the Sample Tube. Use BL2 buffer to adjust the sample volume.</p> <p>OPTIONAL: Use the filter column (ZA030118, not supplied in kit) to remove the residual debris and mucous material before DNA extraction. This will increase the DNA yield by 20-100%.</p>		

For Swab Tissue

1. Cut ↓	Carefully cut or break off the end part of the swab or brush into a 2 ml screw-capped tube (not supplied) using an appropriate tool (e.g., scissors).
2. Add BL2 Buffer ↓	Add 100-400 µl of Buffer BL2 to the sample. Ensure that the sample is fully submerged in the Buffer BL2.
3. Add proteinase K ↓	Add 20 µl of proteinase K, and mix thoroughly by vortexing for 10 s. If processing buccal cell brush samples, centrifuge the tube briefly (at 10,000 x g for 30s) to force the brush towards the bottom of the tube.
4. Incubate ↓	Incubate at 55°C for 15 min (place in a thermomixer, mix set at 1000 r.p.m. or vortex mix several times during incubation in the heat block).
5. Centrifuge ↓	Centrifuge the tube briefly to remove drops from inside the lid.
6. Remove	Remove the swab or brush from the tube. Using forceps, press the swab or brush against the inside of the tube to obtain the maximum sample volume. The sample volume should be approximately the same as the setting volume (100-400µl). Use BL2 buffer to adjust the volume.

For FFPE Tissue

To extract DNA from FFPE samples, please select and refer to
AnaPrep FFPE DNA Extraction Kit (Z1322009)

Quality Control

In accordance with BioChain's ISO-certified Quality Management System, each lot of AnaPrep Tissue DNA Extraction Kit is tested to ensure consistency in product quality.

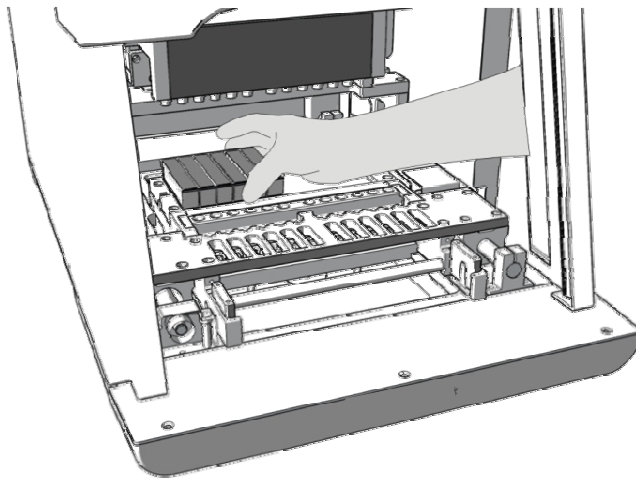
Protocol of extraction

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.

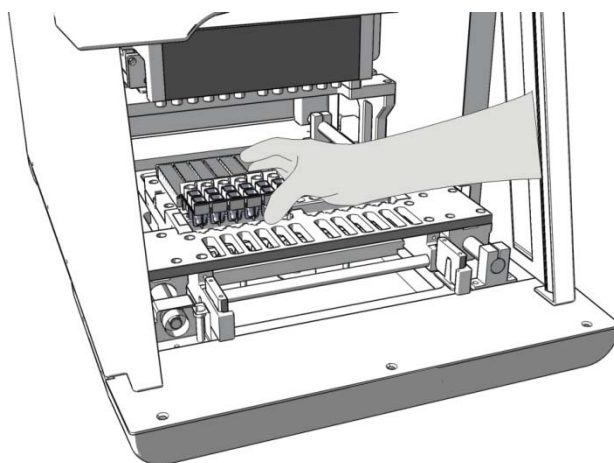
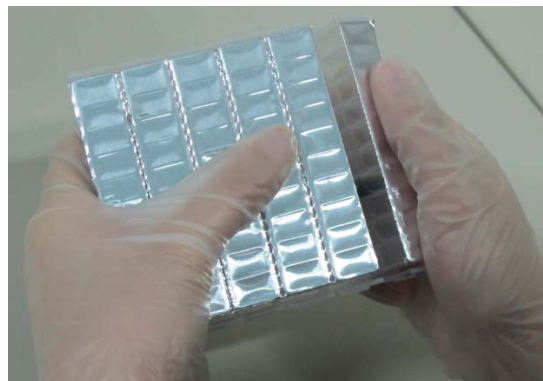
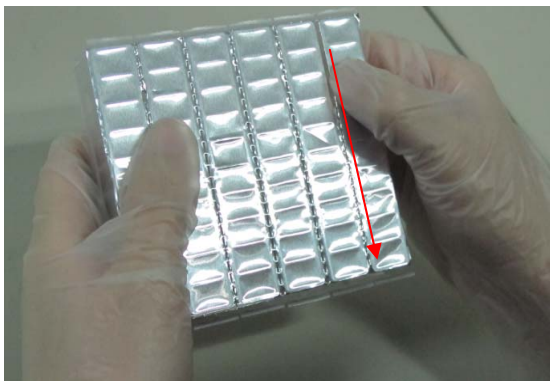
3. Open the sliding door and remove the sample rack from the instrument.
4. Load Reagent Cartridges, and all plastic disposables (Reaction Chamber, Tip Holder, Piercing Pin, and Filtered Tip)



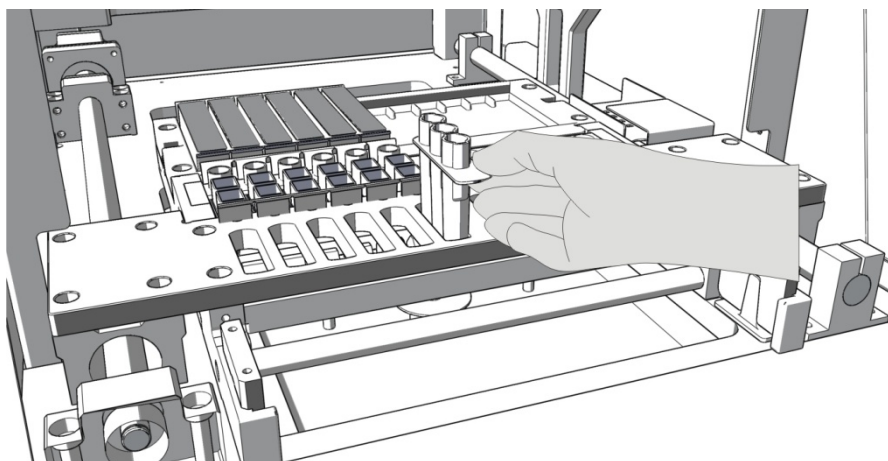
Insert Reagent Cartridges

■ How to pull apart the reagent cartridges

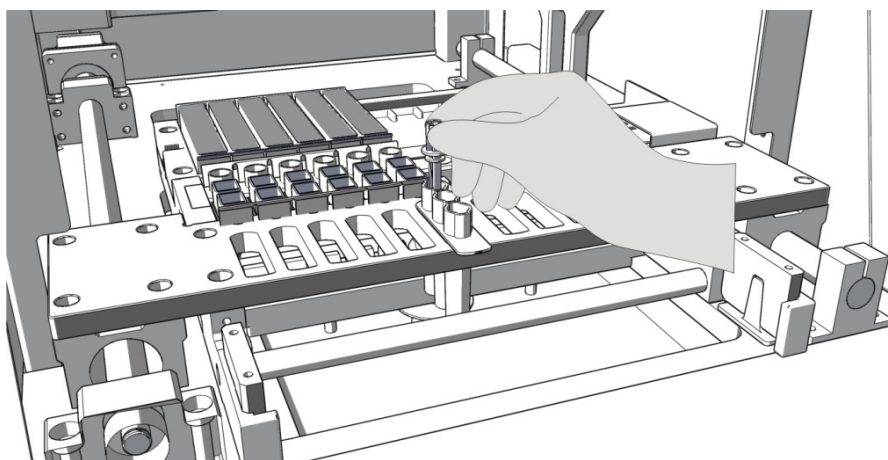
- Cut foil with a finger nail along the dotted line and then snap it apart with a little bit of force.



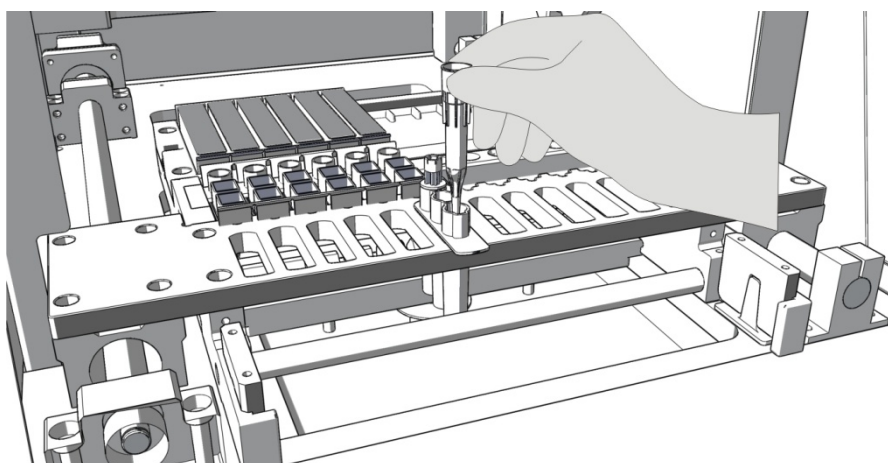
Insert Reaction Chambers



Insert Tip Holder



Insert Piercing Pins



Insert Filtered Tips

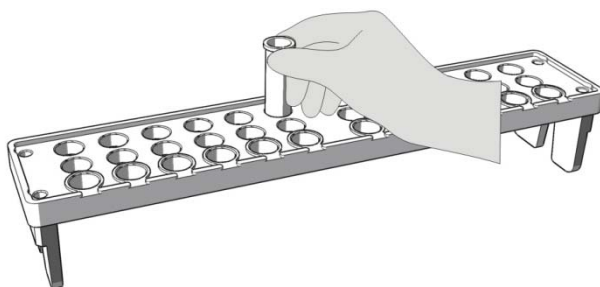
Note:

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

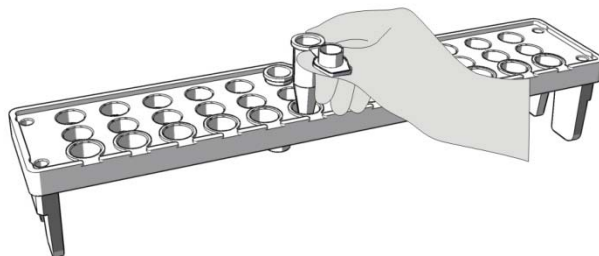
Important:

- 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

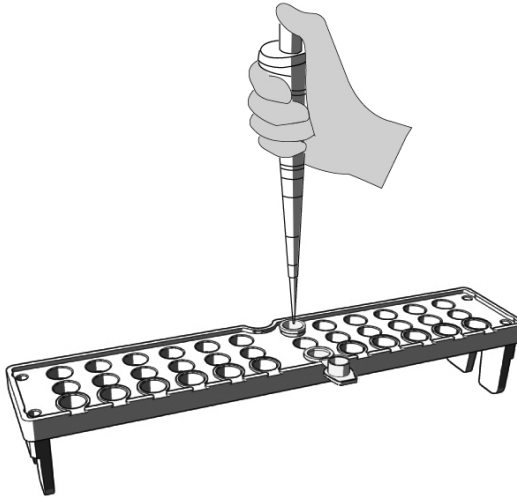


Insert Sample Tube into the Sample Rack



Insert Elute Tube into the Sample Rack

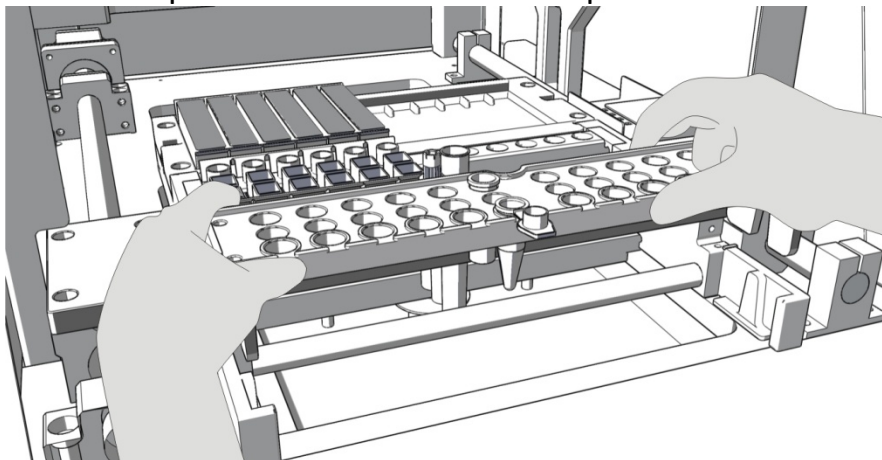
6. Load the sample(s) to Sample Tube.



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.

BioChain Institute Inc.



www.biochain.com

39600 Eureka Dr.

Newark, CA 94560, USA

Tel: 1-510-783-8588

Fax: 1-510-783-5386

Mail: info@biochain.com