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

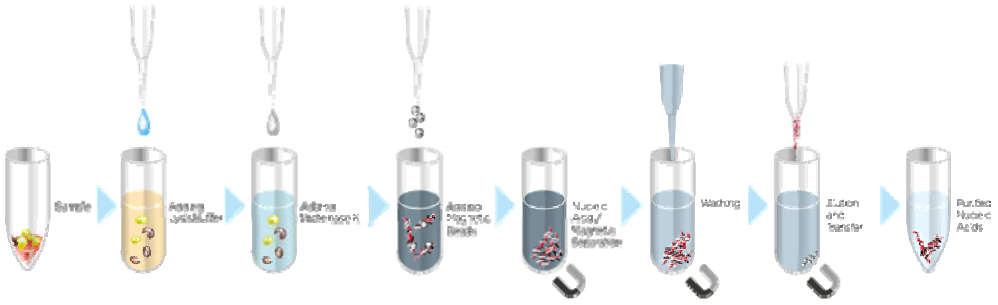
Introduction

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 the 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 in 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 Viral/Pathogen Nucleic Acids Extraction Kit B

Cat. No. Z1322012 Process Time: 40-50minutes

Intended Use

The AnaPrep Viral/Pathogen Nucleic Acids Extraction Kit B is used with the AnaPrep 12 instrument for extraction of Viral DNA or RNA from swab samples (cell-rich samples).

Application

Nucleic acids extracted from the AnaPrep Viral/Pathogen Nucleic Acids Extraction Kit B 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	Z1322011-48
Reagent Cartridge	48 pcs
Reaction Chamber	48 pcs
Tip Holder	48 pcs
Filter tip	50 pcs
Piercing Pin	50 pcs
Sample Tube (2 mL)	50 pcs
Elution Tube (1.5 mL)	50 pcs
RNA Carrier (1mg)	1pc
Barcode Paper	1 pc

Reagent Cartridge Content

well-1	Proteinase K solution	40 µl
well-2	Lysis Buffer3	720µl
well-3	Binding Buffer 1	720µl
well-4	Magnetic Bead Solution	800µl
well-5	Washing Buffer 2	1000 µl
well-6	Washing Buffer A	1000 µl
well-7	Washing Buffer B	1000µl
well-8	RNase-free water	1000µl
well-9	RNase-free water	1000µl
well-10	BL2B Buffer	400µl

Storage

- The AnaPrep Viral/Pathogen Nucleic Acids Extraction Kit B 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.
- After dissolving the RNA carrier, store it at 4°C (short-term, up to 1 month) or -20°C (long-term). Do not freeze–thaw the frozen RNA carrier more than 3 times.
- Store the nucleic acid at 4°C (short-term, up to 24 hours) or -20°C (long-term). Repeated freeze-thawing is not recommended.

Starting Material

- Bacterial pellet/colony from culture, clinical swab samples in liquid transport media, environment material (water, soil, etc.), and other cell-rich samples.
- Use the tissue or paraffin-embedded tissue sections (FFPE) as samples we recommend to extract DNA by AnaPrep Tissue DNA Extraction kit (Z13222004).
- The types and amounts of starting material for use in AnaPrep Viral/Pathogen Nucleic Acids Extraction kit B purification procedures are shown in the Table listed below:

Sample Type	Target Nucleic Acid	Sample volume (Amount of starting material)	Elution Volume
Bacteria Pellet	Total Viral/Bacterial Nucleic acids (DNA/RNA)	100-200µl /Up to 10^9 bacteria (about OD_{600} = 3)	50-300 µl
Bacterial colony		100-200µl /1-3 colony	
Swab samples		100-200µlliquid transport media	
Controls/internal control*	Add controls /internal control in the extraction procedure if the downstream analysis needed (*see controls/internal control on page 10).		

Sample Preparation

- 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 table below describes the recommendations in processing the primary samples **before nucleic acid extraction:**

Preparation of sample material for bacterial nucleic acid extraction

Sample type	Procedure
Inactivation of pathogenic microorganism	**Recommended pretreatment : Boiling** 1. Incubate samples at 95°C for 10 min. 2. Centrifuge briefly to collect the complete sample volume at the bottom of the tube. 3. Allow samples to cool down or chill on ice, then proceed to the steps that follow according to the sample type.
Viscous samples e.g. BAL, sputum or other mucous specimen	**Recommended pretreatment : Liquefaction** 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. Incubate the sample (e.g., with shaking at 850 rpm for 30 min at 37°C) until it can be pipetted easily. 4. Transfer 200 µl to sample tube (Supplied in the kit). * 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.

For large volume liquid samples that have low or unknown bacterial loads e.g. urine, water collected from pool/river stream/tower	**Recommended pretreatment : Centrifugation** 1. Centrifuge the sample for up to 10 min at 20,000 × g to concentrate the bacterial cells in pellet. 2. Discard supernatant; resuspend the pellet in 220µl PBS. 3. Take 200µl to sample tube (Supplied in the kit).
Swab samples e.g. eye, nasal, pharyngeal, or other swabs	1. Collect samples and place in 1 ml PBS containing a common fungicide. Incubate for 30min at room temperature. 2. Take 200µl to sample tube.
For some gram-positive bacteria species. Especially for samples that contain particles e.g. stool	**Recommended pretreatment : Mechanical homogenization** Follow the regular homogenization procedures in the laboratory.
Bacterial suspension cultures	Take 200µl culture to sample tube
Bacterial colony	1. Take 1-3 bacterial colonies from culture plate with an inoculation loop and suspend in 220µl PBS by vigorous stirring. 2. Take 200µl suspension to sample tube.

Controls/ internal control

Using appropriate controls for downstream analysis:

Type	Description	Location
Positive control	Using sample which positive for target	Place in sample tube
Negative control	Using sample which negative for target or water (NTC)	Place in sample tube
Internal control(IC)	Using a defined quantity control	Place in sample tube or the round well of the reaction chamber

Quality Control

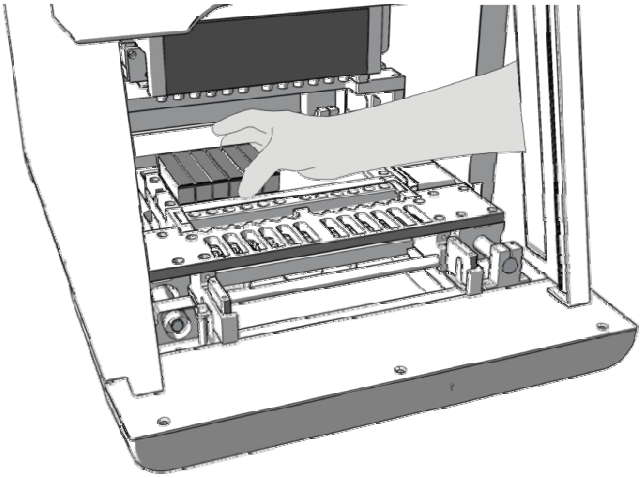
In accordance with BioChain's ISO-certified Quality Management System, each lot of AnaPrep Viral/Pathogen Nucleic Acids Extraction kit B is tested against predetermined specifications to ensure consistent product quality.

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.

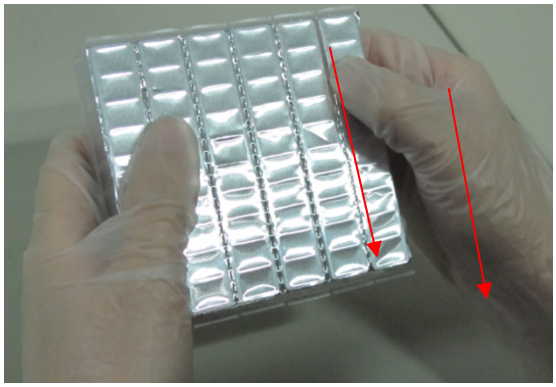
4. Load Reagent Cartridges, and all plastic disposables (Reaction Chamber, Tip Holder, Piercing Pin, and Filtered Tip)

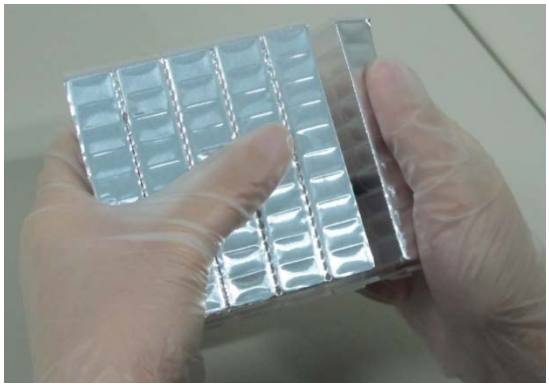


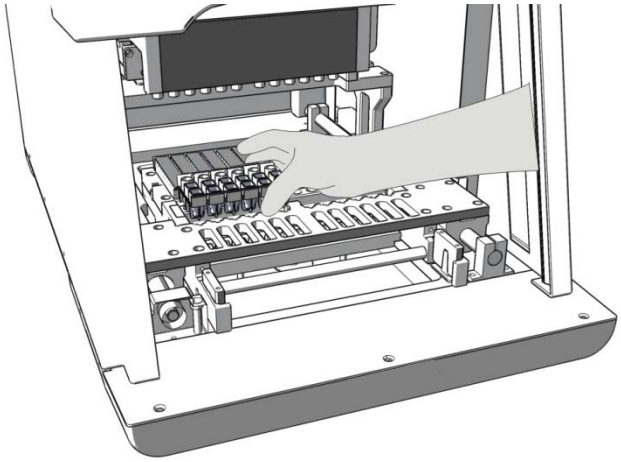
Insert Reagent Cartridges

■ How to pull apart the reagent cartridges

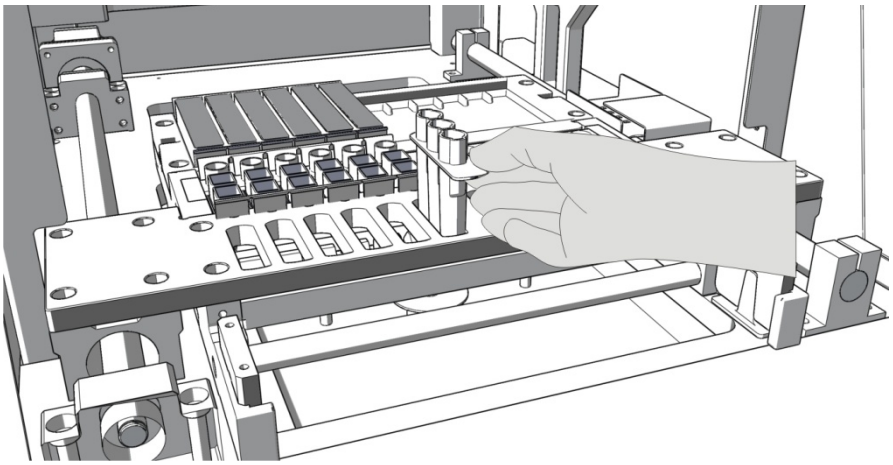
- Cut foil with a finger nail along the dotted line and then snap it apart with a little bit of force.



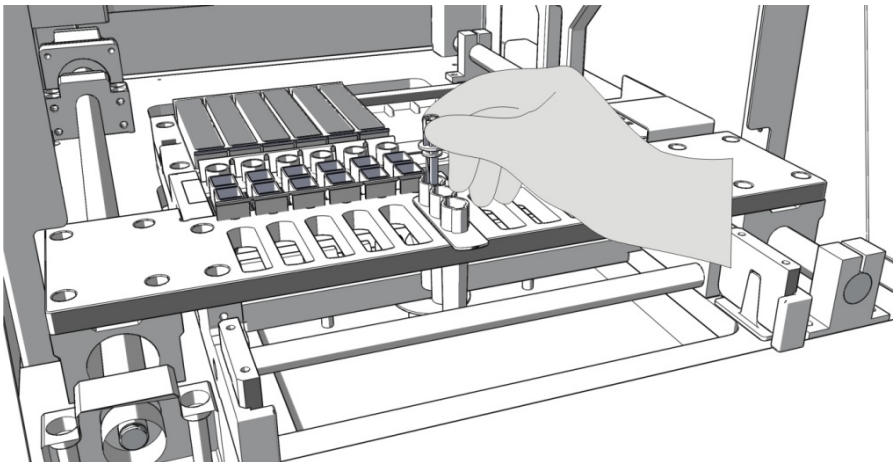




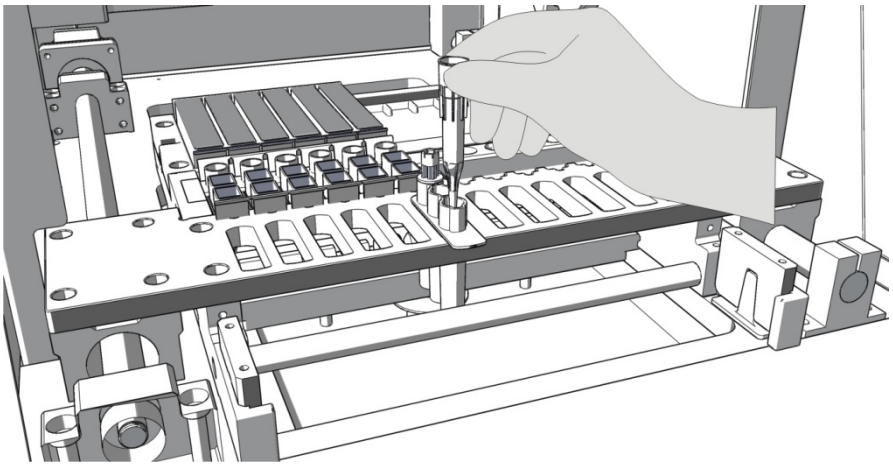
Insert Reaction Chambers



Insert Tip Holder



Insert Piercing Pins



Insert Filtered Tips

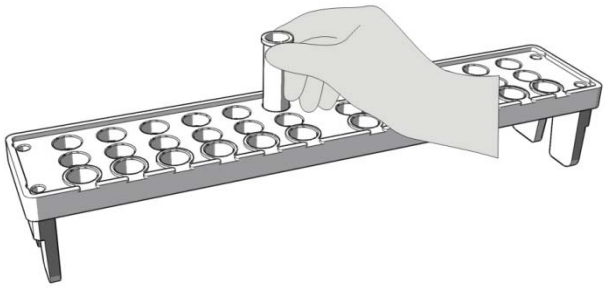
Note:

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

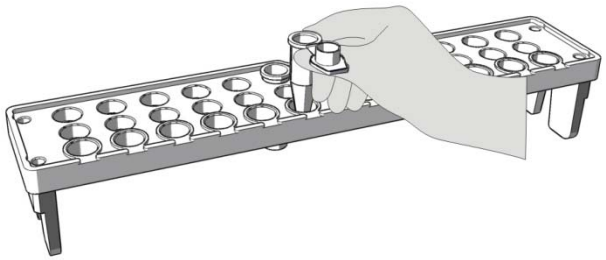
Important:

- 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

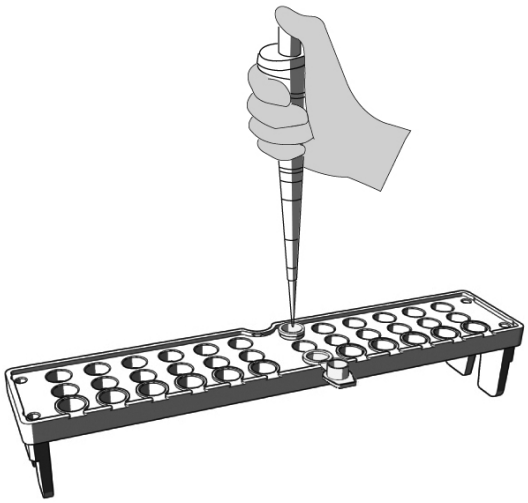


Insert Sample Tube into the Sample Rack



Insert Elute Tube into the Sample Rack

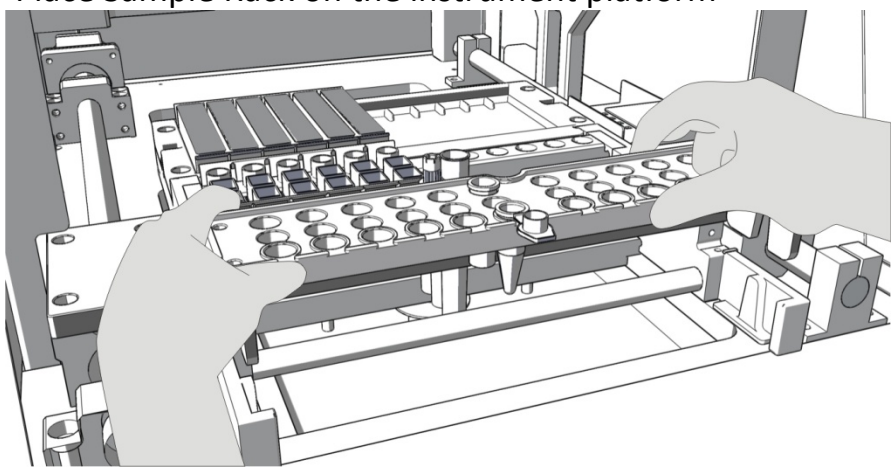
6. Load the sample(s) to Sample Tube.



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.

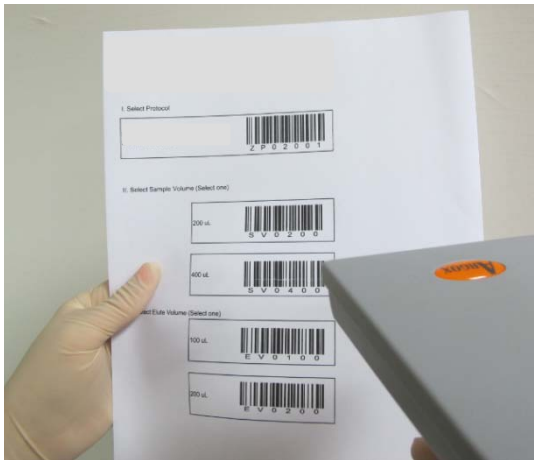
7. Place Sample Rack on the instrument platform



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^{o}C for short-term storage or store at -70^{o}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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