USER GUIDE

ExiPrep™ Plus Viral DNA/RNA Kit

Cat. No. K-4271
K-4272
K-4273

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ExiPrep™ Plus Viral DNA/RNA Kit (K-4271)
ExiPrep™ Plus Viral DNA Kit (K-4272)
ExiPrep™ Plus Viral RNA Kit (K-4273)

Kit for the extraction of DNA/RNA from virus

User Guide

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Version No.: 5 (2022-06-10)

Please read all the information in booklet before using the unit

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Intended Use

ExiPrep™ Plus Viral DNA/RNA Kit is developed and supplied for research purposes only. Certain applications possible with this kit may require special approval by appropriate local and/or national regulatory authorities in the country of use.

Safety Warning and Precaution

Wear appropriate protection when handling any irritant or harmful reagents. The use of a laboratory coat, protective gloves and safety goggles are highly recommended. For more information, please consult the appropriate Material Safety Data Sheet (MSDS).

Warranty and Liability

All BIONEER products undergo extensive Quality Control testing and validation. BIONEER guarantees quality during the warranty period as specified, when following the appropriate protocol as supplied with the product. It is the responsibility of the purchaser to determine the suitability of the product for its particular use. Liability is conditional upon the customer providing full details of the problem to BIONEER within 30 days.

Quality Management System ISO 9001 Certified

Every aspect of our quality management system from product development, production to quality assurance and supplier qualification meets the world-class standards.

Patent

ExiPrep™ and its kits are protected by the patents KR10-2015-0089172.

Trademark

ExiPrep™ is a trademark of BIONEER Corporation.

Copyright

Notice

BIONEER corporation reserves the right to make corrections, modifications, improvements and other changes to its products, services, specifications or product descriptions at any time without notice.

Contents

Product Information

Components

Components	K-4271 (Viral DNA/RNA)	K-4272 (Viral DNA)	K-4273 (Viral RNA)
Buffer Cartridge ①	6 ea	6 ea	6 ea
Buffer Cartridge ②	6 ea	6 ea	6 ea
Disposable Filter Tip	3 packs (32 ea/pack)	3 packs (32 ea/pack)	3 packs (32 ea/pack)
Elution Tube	8-tube strips x 12 ea	8-tube strips x 12 ea	8-tube strips x 12 ea
User Guide	1 ea	1 ea	1 ea

* **Note:** All provided consumables including disposable tips, reaction tubes, and elution tubes are DNase- and RNase-free.

Storage

The kit will maintain performance for at least two years under standard storage conditions.

Each Buffer Cartridge is hermetically sealed with a three-ply sealing foil and then wrapped in film to protect against leakage, evaporation, and cross-contamination. The Buffer Cartridges can be stored dry at room temperature (15-25°C) for up to 2 years from the date of delivery, provided they remain sealed.

The kit also contains lyophilized enzymes (Proteinase K and carrier RNA), which are pre-loaded into Buffer Cartridge. They can be stored at room temperature up to 2 years without any reduction in activity, provided they remain unopened. Once dissolved, enzymes should be stored at -20°C for up to 6 months.

Specifications

Sample Type	Amount of Starting Sample
Serum	200 µl
Plasma	
CSF	
Urine	
BAL	
Cell free body fluid	
Saliva	
Swab	1 ea

*** Note:** There may be differences in measured values depending on the type of samples.

Precautions

- RNA is highly susceptible to degradation by exogenous RNase that may be introduced during the handling steps, all the steps must be conducted under sterile, RNase-free condition.
- RNase-free reagents, pipette tips, and tubes must be used with gloved hands while handling them.

Introduction

Product Description

ExiPrep™ Plus Viral DNA/RNA Kits are designed for extraction of highly purified DNA or RNA from serum, plasma, Cerebrospinal fluid (CSF), Bronchoalveolar lavage (BAL), urine, swab, or other cell-free body fluids. *ExiPrep*™ Plus Viral DNA/RNA Kits provide total solution for accurate and rapid total DNA/RNA extraction. These kits employ our unique Buffer Cartridge system. The Buffer Cartridges contain all components for nucleic acid extraction, including: binding buffer, washing buffer, elution buffer, and magnetic nanobead solution. The Buffer Cartridges are key to extract total DNA/RNA with the aid of *ExiPrep*™16 Plus (Cat. No. A-5030). *ExiPrep*™16 Plus is designed for rapid extraction of nucleic acids delivering up to 16 extracted samples automatically. RNA extracted through this kit can be used for a variety of applications, including: reverse transcription PCR (RT-PCR), reverse transcription quantitative PCR (RT-qPCR), Northern blot analysis, and cDNA synthesis.

Principle

ExiPrep™ Plus Viral DNA/RNA Kits use Magnetic Nano Beads to extract nucleic acid. Buffers within the kit assist nucleic acid to bind to silica-coated magnetic nanobeads. As a result, high yield and highly purified nucleic acid is extracted from samples.

The Buffer Cartridges consist of binding buffer, washing buffer, elution buffer, and magnetic nanobeads. Samples are lysed in the presence of a guanidine-thiocyanate-containing buffer, which is a highly denaturing agent and inactivates RNase to isolate RNA. Extracted DNA/RNA is bound to silica-coated magnetic nanobeads. Proteins and other contaminants are eliminated by subsequent washing, and highly purified DNA or RNA is eluted in an elution buffer.

Features & Benefits

- Convenient & Rapid: Uses a pre-filled buffer cartridge system in which enzymes and reagents for nucleic acid extraction are dispensed.
- Reproducible: Uses fully automatic nucleic acid extraction equipment, and reproducible results can be obtained.
- Efficient: Contains all required consumables such as Disposable Filter Tips and Elution Tubes.
- Ready-to-use: Extracted DNA/RNA is ready-to-use for various application.

Components of Buffer Cartridges

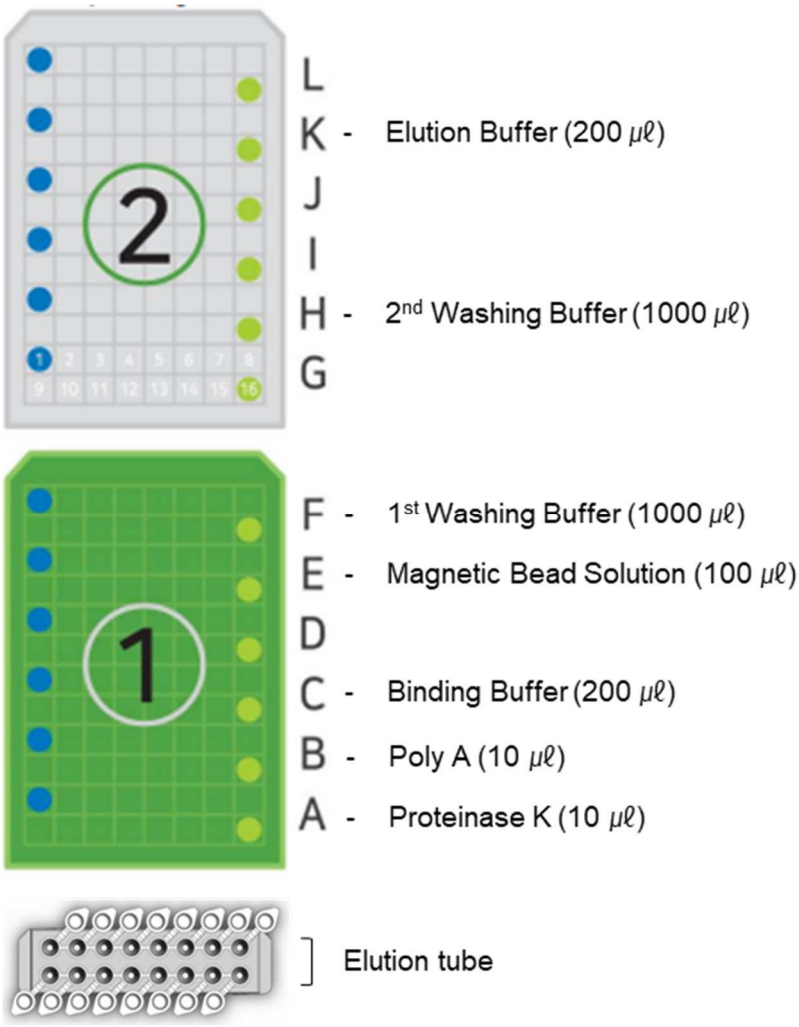
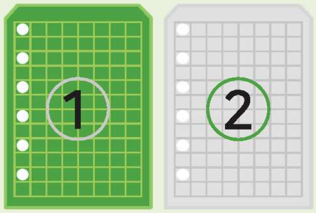
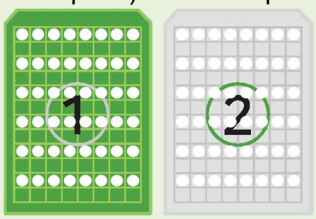
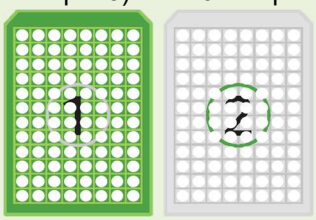
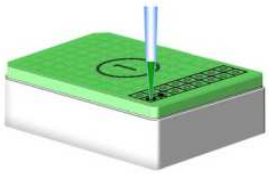
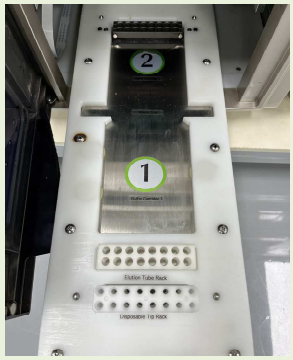
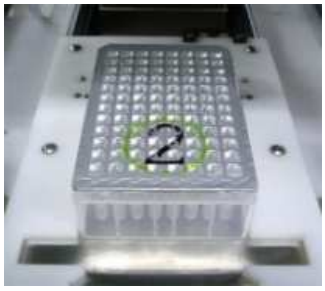


Figure 1. Position of reagents, tubes, and starting material in Cartridges/Elution Tube Rack of *ExiPrep*™ Plus Viral DNA/RNA Kit (K-4271), *ExiPrep*™ Plus Viral DNA Kit (K-4272), *ExiPrep*™ Plus Viral RNA Kit (K-4273).

Experimental Procedures

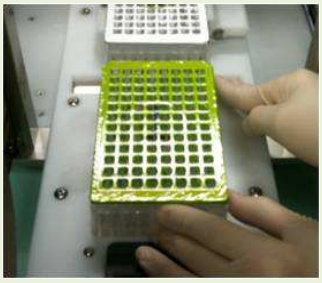
Loading the Kit to the Instrument

Steps	Procedure Details
Example 1) For 1 sample  Example 2) For 8 samples  Example 3) For 16 samples  	1. Punch holes in the sealing films of Buffer Cartridge ① and ② using 6-Hole Punch (*ExiPrep*™ 16 Plus's accessory) according to the number of samples. * **Note:** Before punching the hole, agitate the Buffer Cartridge gently to settle the beads and buffer.
	2. Load 200 µl of sample into 'Sample loading well' of Cartridge ①. * **Note:** Be careful not to contaminate any other wells.
 	3. Open the door of *ExiPrep*™ 16 Plus and pull out the baseplate completely.

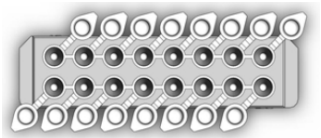


4. Place the Buffer Cartridge ② onto the proper position of the baseplate.

*** Note:** Please check the punched holes of the Buffer Cartridge ②.

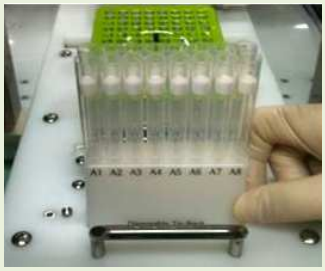


5. Place the Buffer Cartridge ① onto the proper position of the baseplate.



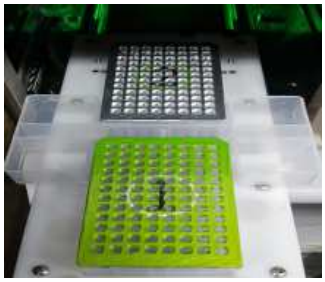
6. Place the Elution Tube Rack including Elution Tubes onto the proper position of the baseplate. The Elution Tube Rack is slotted so it can only be placed in the correct orientation.

*** Note:** Make sure the direction of the Elution Tube caps laid out as on the left when inserting into the Elution Tube Rack.



7. Place the Disposable Filter Tip Rack onto the proper position of the base plate.

*** Note:** Tips should be placed in the corresponding positions with the punched holes of the Cartridges.



8. Place the Waste tray between Buffer Cartridge ① and ②.

9. Finally, confirm holes in the cartridges and position of samples and tips. Push the baseplate completely until you hear the click sound, then close the door.

10. Turn on the *ExiPrep*™ 16 Plus.

11. In the MENU screen, press ‘Start’ button to select a proper protocol.

12. The PREP SETUP screen appears as shown in the left, press protocol number according to the protocol number list (pp. 12-14). Confirm following information displayed on the screen, and then press the ‘Enter’ button.

13. Select the desired elution volume from the touch screen.

14. Press the ‘ok’ button to move to the next step.

15. Ensure that everything is correctly installed following the CHECK LIST, then choose “ok”.

16. In the Running Mode screen, ensure that the protocol name appears on the screen.

17. Press the “RUN” button to initiate DNA extraction.

18. “Work Completion” screen appears when the protocol is completed. Open the door and collect final DNA from the Elution Tubes.

19. Remove all components used in the experiment, and choose 1, 2, or ok.

*** Note:** If you want to quit and press the ‘ok’ button, the UV lamp will be turned on automatically.

Troubleshooting

Problem	Comments
Low DNA/RNA yield or purity	• **You may have used too much (or too little) starting material.** The yield is dependent on the sample type and amount of starting sample. Appropriate amount of starting sample should be used for efficient extraction of nucleic acid.
	• **The lysis may have been incomplete.** Centrifuge completely to obtain clear lysate.
	• **Incomplete suspension of the magnetic nanobeads may decrease the DNA/RNA yield or purity.** You should agitate the Buffer Cartridge ① before use.
Co-eluted magnetic nanobeads	Sometimes magnetic nanobeads are eluted with your viral DNA/RNA. Magnetic nanobeads in the eluate will not affect the performance of the DNA/RNA in downstream applications. Furthermore, magnetic nanobeads cannot bind DNA/RNA in elution buffer, though it may affect readings on a spectrophotometer. Magnetic nanobeads that are carried over can be easily separated by centrifugation at 13,000 rpm for 1 minute.

Appendix A

List of Protocol Numbers

Protocol Number	Target	Sample Source
No. 401	Viral DNA	Whole blood
No. 402	Viral DNA	Animal tissue
No. 412	Viral DNA	Plasma
No. 413	Viral DNA	Serum
No. 414	Viral DNA	Buffy coat
No. 415	Viral DNA	Sputum
No. 416	Viral DNA	BAL
No. 417	Viral DNA	Saliva
No. 418	Viral DNA	Swab
No. 419	Viral DNA	Urine
No. 420	Viral DNA	Stool
No. 421	Viral DNA	Cell-free body fluid
No. 422	Viral DNA	Pleural fluid
No. 423	Viral DNA	CSF
No. 424	Viral DNA	EPS
No. 425	Viral DNA	Respiratory sample
No. 426	Viral DNA	Amniotic fluid
No. 427	Viral DNA	Forensic sample
No. 428	Viral DNA	Bone marrow
No. 429	Viral DNA	Bone
No. 430	Viral DNA	Dried blood spot
No. 431	Viral DNA	Soil
No. 432	Viral DNA	Hair
No. 433	Viral DNA	Cell supernatant

No. 501	Viral RNA	Whole blood
No. 502	Viral RNA	Animal tissue
No. 512	Viral RNA	Plasma
No. 513	Viral RNA	Serum
No. 514	Viral RNA	Buffy coat
No. 515	Viral RNA	Sputum
No. 516	Viral RNA	BAL
No. 517	Viral RNA	Saliva
No. 518	Viral RNA	Swab
No. 519	Viral RNA	Urine
No. 520	Viral RNA	Stool
No. 521	Viral RNA	Cell-free body fluid
No. 522	Viral RNA	Pleural fluid
No. 523	Viral RNA	CSF
No. 524	Viral RNA	EPS
No. 525	Viral RNA	Respiratory sample
No. 526	Viral RNA	Amniotic fluid
No. 527	Viral RNA	Forensic sample
No. 528	Viral RNA	Bone marrow
No. 529	Viral RNA	Bone
No. 530	Viral RNA	Dried blood spot
No. 531	Viral RNA	Soil
No. 532	Viral RNA	Hair
No. 533	Viral RNA	Cell supernatant
No. 601	Viral DNA/RNA	Whole blood
No. 602	Viral DNA/RNA	Animal tissue
No. 612	Viral DNA/RNA	Plasma
No. 613	Viral DNA/RNA	Serum

No. 614	Viral DNA/RNA	Buffy coat
No. 615	Viral DNA/RNA	Sputum
No. 616	Viral DNA/RNA	BAL
No. 617	Viral DNA/RNA	Saliva
No. 618	Viral DNA/RNA	Swab
No. 619	Viral DNA/RNA	Urine
No. 620	Viral DNA/RNA	Stool
No. 621	Viral DNA/RNA	Cell-free body fluid
No. 622	Viral DNA/RNA	Pleural fluid
No. 623	Viral DNA/RNA	CSF
No. 624	Viral DNA/RNA	EPS
No. 625	Viral DNA/RNA	Respiratory sample
No. 626	Viral DNA/RNA	Amniotic fluid
No. 627	Viral DNA/RNA	Forensic sample
No. 628	Viral DNA/RNA	Bone marrow
No. 629	Viral DNA/RNA	Bone
No. 630	Viral DNA/RNA	Dried blood spot
No. 631	Viral DNA/RNA	Soil
No. 632	Viral DNA/RNA	Hair
No. 633	Viral DNA/RNA	Cell supernatant

Ordering Information

Description	Cat. No
ExiPrep™ Plus Viral DNA/RNA Kit	K-4271
ExiPrep™ Plus Viral DNA Kit	K-4272
ExiPrep™ Plus Viral RNA Kit	K-4273

Related Products

Description	Cat. No
ExiPrep™16 Plus	A-5030
ExiProgen™	A-5041

Explanation of Symbols

LOT Batch Code	Biological Risks	REF Catalog Number	Caution
Consult Instructions For Use	Contains Sufficient for <n> tests	Do not Re-use	Manufacturer
RUO Research Use Only	Temperature Limitation	Use-by Date	

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