FaSTAR-XT PGS DNA/RNA Kit (W)

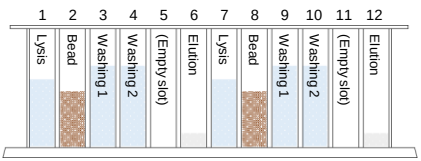
REF 17602-96 Σ 96 RUO 15℃ 25℃

INTRODUCTION

- The FaSTAR-XT PGS DNA/RNA Kit is operated by the FaSTARprep96 Automated Nuclear Acid Extraction System equipment and is intended to refine viral DNA/RNA in samples such as cotton swabs and blood. Viral nucleic acids are easily bound to the surface of magnetic beads contained within the product and eluted using a dedicated buffer system.
- The FaSTARprep96 Automated Nuclear Acid Extraction System must have FaSTAR-XT firmware installed and a high-strength magnetic rod and sleeve dedicated to FaSTARprep96 to run the appropriate protocol (Viral DNA/RNA, FaSTAR-XT Fast).
- The viral DNA/RNA refining procedure can be performed in a simple way with minimal manipulation prior to automated refining, and the eluted fraction is eluted into a high purity viral DNA/RNA suitable for use in downstream applications such as PCR, real-time PCR, etc. The FaSTAR-XT PGS DNA/RNA Kit (W) can process 16 ~ 96 samples within 12 to 20 minutes.

PRODUCT COMPONENTS AND STORAGE CONDITIONS

No.	Contents	Unit	Q'ty
1	Prefilled plate	16 tests/plate	6
2	Mixing Sleeve	8 ea/unit	12
3	Proteinase K (Lyophilized)	33 mg/bottle	1
4	DNase/RNase Free Water	1 ml/vial	2
5	User Manual	ea	1



- Shipping & Storage temperature : Room temperature (15~25ºC)
- Storage period : up to 24 months
- Proteinase K : Dissolve the Proteinase K in 1.65 ml of pure D.W.
  ⚠ Add 1.65 ml of DNase/RNase Free Water, dissolve it, and store it in a freezer (-20℃). Do not repeat cold defrosting more than 20 times.

INTENDED USE

- For research use only.
- Not intended for the diagnosis, prevention, or treatment of a disease

MATERIALS REQUIRED BUT NOT PROVIDED

- FaSTARprep96 Automated Nucleic Acid Extraction System (IMC-FAST-P96D, MFDS Certificate No. 23-1197)
- Pipette and air barrier tip
- Vortex mixer
- Disposable gloves
- 1.5 ml micro tube
- General lab equipment

NOTICE

1. For research purpose only.
2. Samples may contain unknown pathogens, and each reagent contains a chemical, so protective gear must be worn and handled by a product-trained persons.
3. Avoid contamination and direct contact with the test specimen and be careful.
4. Workspaces and pipette surfaces should be disinfected regularly with 10% loose or disinfectant.
5. All waste should be sterilized before disposal to remove biological activity and treated as medical waste.

APPLICATION METHODS

❖ **Pre-use Preparation**

1. Turn on FaSTARprep96 Automated Nucleic Acid Extraction System.
Caution : It is recommended to maintain the equipment with ultraviolet rays before use.

2. Prepare the appropriate number of Mixing sleeves.
Caution : The mixing sleeve must be inserted in the correct position so that the sensor recognizes it and the equipment will operate normally. The mixing sleeve must be inserted into plate wells 2 and 8.

3. Take out the Proteinase K and defrost it, and the FaSTAR-XT PGS Prefilled Well plate and prepare it.
Caution : To prevent evaporation and contamination of reagents, remove the sealing film and prepare for immediate inspection.

❖ **Sample Preparation**

1) Cells : 5 x 10^6 cells, resuspend the pellet with 200 µL of media or buffer.

2) Swab : Resuspend each sample of cotton swab again in an appropriate amount of buffer. A minimum sample volume of 200 µL is required.

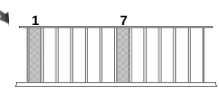
3) Body fluids (Whole Blood, including plasma and serum) : Use 200 µL sample after lightly vortex mixing.

PROTOCOL

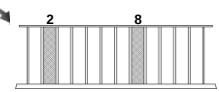
1. Remove the sealing film from the FaSTAR-XT PGS Prefilled Plate.
Caution : When removing the film, make sure that the buffer inside the plate does not protrude.

2. (Optional) Inject 15 µL of proteinase K solution into each of the wells 1 and 7.
Note : Proteinase K helps extract nucleic acids from viruses with envelope structures. For viruses that do not have an envelope structure, you do not need to add Proteinase K.

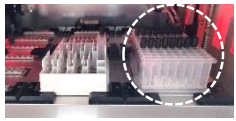
3. Add 200 µL of samples to each of the wells 1 and 7.
- Add 15 µL of Proteinase K & Add 200 µL of Sample



4. Install the mixing sleeve in the wells in rows 2 and 8.
- Mixing Sleeve



5. **Insert the prefilled well plate into the heating tray.**
   Note : The Insert the plate the heating tray so that the position of the well into which the sample is inserted is the far left. Incorrect insertion or de-insertion may result in a job error and extraction may not work.



" Properly insert the well plate into the heating tray."

6. **Press the 'FaSTARprep' button on the 'LiliF' logo on the touch display of the FaSTARprep96 automatic nucleic acid extraction system to go to the Protocol menu screen. It automatically changes to the Protocol menu screen after a few seconds without pressing the button.**

7. **Select the 'Viral DNA/RNA' or 'FaSTAR-XT fast'icon for nucleic acid extraction as shown below. Then press the '▷' button on the next screen to proceed with the extraction.**

   Note : It starts automatically and displays the time remaining on the screen. You can check the extraction progress time in the touchscreen window. Press the 'Pause' button to force a stop after the step is completed.
   Caution : If the operation stops due to forced stop, it is recommended that the operation be checked before proceeding with the test as it is not possible to continue.

8. **After completion of device working, transfer the 80~90 µL of Elution fraction (wells 6) to a new 1.5 ml Microtube. Then store the nucleic acid at appropriate temperature (4ºC : 1~2 days, -20ºC : 1~4 weeks, -70ºC : 1~6 month).**

TROUBLE SHOOTING GUIDE

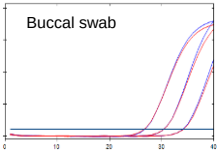
Problem	Possible causes and comments
Lower nucleic acid recovery than expected	• Sample homogenization was incomplete. • Incomplete homogenization samples results is loss of yield within particulates and clump of debris • The starting samples were compromised. Ensure that samples (e.g., for customer-provided internal controls) were collected, shipped and stored according to recommended guidelines. • The FaSTARprep96 Automated Nucleic Acid Extraction System Instrument was set for the wrong method. Ensure that the correct method is chosen in Viral DNA/RNA (or FaSTAR-XT fast) Mode. • Check that the mixing sleeve is properly installed on the plate. Ensure that all plates are installed in the correct orientation before processing. • Check amount and storage conditions of starting materials
Poor amplification	• Paramagnetic particle carryover may cause interference in amplification reaction. Remove particles in Elution Tube by centrifugation.
Cross-contamination	• Avoid splashing when adding a solvent to the plate. To prevent contamination from sample to sample, each sample is equipped with a separate mixing sleeve and is designed to minimize exposure to the melt through rotary mixing operation
Protocol not an option on the instrument	• Check the software version of the FaSTARprep96 Automated Nucleic Acid Extraction System instrument. If abnormalities are identified, request the manufacturer to reinstall the firmware version containing the Viral DNA/RNA protocol.

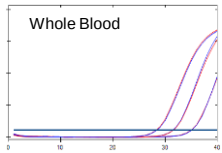
[EXPERIMENTAL INFORMATIONS]

Amplification plot analysis of nucleic acid extracts from various samples

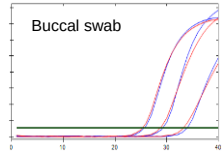
The FaSTAR-XT PGS DNA/RNA Kit (W) provides a simple and rapid method of isolating Viral RNA from various pathogenic samples such as swabs, whole blood, sputum and stool.

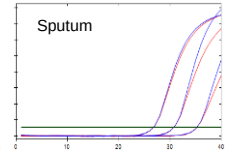
1) Pestivirus (CSF)



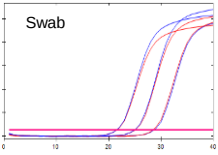


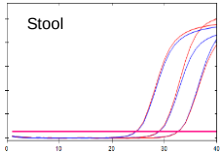
2) β-Coronavirus





3) Rotavirus





1) Pestiviurs (CSF) : 20/2/0.2 $TCID_{50}$
2) B-Coronavirus : 200/20/2 $TCID_{50}$
3) Rotaviurs : 200/20/2 $TCID_{50}$

■ (I)– Individual Type ■ (W) – Well plate Type

The FaSTAR-XT PGS DNA/RNA Kit demonstrated equal performance in both well plate type (W) and individual type (I). The results of verifying the extraction performance using various pathogenic samples with added virus standard materials showed effective virus nucleic acid extraction performance even at high and low concentrations.

RELATED PRODUCTS

Cat.No.	Product Name	Q'ty
IMC-FAST-P96D	FaSTARprep96 Automated Nucleic Acid Extraction System	System
17602-48	FaSTAR-XT PGS DNA/RNA Kit (I)	48 tests
17602-96	FaSTAR-XT PGS DNA/RNA Kit (W)	96 tests

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EXPLANATION OF SYMBOLS

LOT Batch number	Attention	Keep away from sunlight
REF Product number	Sufficient for tests	Manufactured by
RUO Research use only	Do not reuse	Manufacturing date
Consult Instructions For Use	Storage temperature limitation	Expire date