



FaSTAR-XT PGS DNA/RNA Kit (Ver 2.0)

QUICK GUIDE

Individual Type: 17602-48
Well-plate Type: 17602-96

1. KIT DESCRIPTION

The FaSTAR-XT PGS DNA/RNA Kit (Ver 2.0) is designed for the rapid and efficient extraction of viral DNA and RNA from various sample types, including swabs and blood. The kit is operated using the FaSTARprep96 Automated Nucleic Acid Extraction System, which must be equipped with the FaSTAR-XT firmware and a high-strength magnetic rod and sleeve specifically designed for FaSTARprep96 to perform the appropriate extraction protocol. During extraction, viral nucleic acids bind efficiently to the surface of magnetic beads contained in the kit and are subsequently eluted using a dedicated buffer system. The resulting viral DNA/RNA is of high purity and stability, making it suitable for a wide range of downstream molecular biology applications, including enzyme digestion, polymerase chain reaction (PCR), real-time PCR, DNA library construction, Southern hybridization, and blotting.

2. CHARACTERISTICS

- Testing Principle:** Based on the principle of magnetic bead adsorption, magnetic beads are adsorbed, transferred, and released using special magnetic rods. This enables the automatic completion of nucleic acid extraction and final isolation of high-purity nucleic acids.
- Automated & High-Throughput:** The Individual type (I) can process 1 or more individual samples within 12 to 20 minutes. The Well Plate type (W) can process 16 to 96 samples within 12 to 20 minutes.
- High Sensitivity:** The kit is capable of extracting more than 100 copies/mL of viral DNA or RNA nucleic acid, with intra- and inter-batch variation of less than 5%.

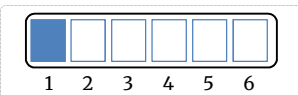
3. INTENDED USE & APPLICATIONS

- Intended Use :** For research use only (RUO). Not intended for the diagnosis, prevention, or treatment of a disease.
- Applications :** Provides a simple, rapid, and minimally handled workflow prior to automated purification of viral DNA and RNA from various pathogenic samples such as swabs, whole blood, sputum, and stool.

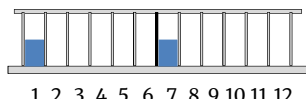
4. KIT CONTENTS & STORAGE

Contents	17602-48 (Cartridge Type)	17602-96 (Plate Type)
Prefilled Individual Tube / Plates	48 Prefilled Individual Tube (48 T)	6 Prefilled Well Plates (96 T)
Mixing Sleeve	48 ea	96 ea

• Cartridge (Individual) Type



• Plate Type



• Reagent Composition

1/7 : Lysis Buffer, 2/8 : Bead Solution, 3/9 : Washing Buffer 1
4/10 : Washing Buffer 2, 5/11 : Empty slot, 6/12 : Elution Buffer

• Storage & Stability

Shipping and storage temperature should be at Room temperature (15~25°C). The storage period is up to 24 months.

5. SAFETY INFORMATION & HAZARD WARNINGS

- Hazard Warning:** Samples may contain unknown pathogens, and each reagent contains a chemical. Protective gear must be worn and handled by product-trained persons.
- Contamination Prevention:** Avoid contamination and direct contact with the test specimen and be careful.
- Decontamination:** Workspaces and pipette surfaces should be disinfected regularly with 10% bleach (loose or disinfectant).
- Waste Disposal:** All waste should be sterilized before disposal to remove biological activity and treated as medical waste.

6. MATERIALS REQUIRED BUT NOT PROVIDED

- FaSTARprep96 Automated Nucleic Acid Extraction System
- Pipette and air barrier tips
- Disposable gloves
- Vortex mixer
- 1.5 ml micro tubes
- General lab equipment)



7. BEFORE YOU BEGIN

- Turn on the FaSTARprep96 Automated Nucleic Acid Extraction System.



Caution : It is recommended to maintain the equipment with ultraviolet rays before use.

- 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.

- Take out the FaSTAR-XT PGS Prefilled Individual Tube or Well Plate and prepare it.



Caution : To prevent evaporation and contamination of reagents, remove the sealing film and prepare for immediate inspection.

8. PROTOCOLS

8.1. Sample Preparation

- Cultured Cell:** 5×10^6 cells per 200 μ L suspension.
- Swab:** Air-dry for at least 2 hours after collection, then resuspend with 200 μ L of PBS buffer.
- Blood, Serum, Body fluids:** 200 μ L of specimen.

8.2. DNA/RNA Extraction (Automated Workflow)

- Remove Film:** Remove the sealing film from the FaSTAR-XT PGS Prefilled individual tube or Prefilled Plate.



Caution : When removing the film, make sure that the buffer inside the plate does not pop out or protrude.

- For Individual Type (I) only:** Attach the Prefilled tubes to the cartridge rack, ensuring that each is aligned correctly.

- Add Sample:** Add 200 μ L of samples into the appropriate wells.
 - For Individual Type (I):** Add into well 1 of each individual tube.
 - For Well Plate Type (W):** Add into columns 1 and 7 of the plate.

- Install Mixing Sleeve:**
 - For Individual Type (I):** Install the mixing sleeve into well 2 of each individual tube.
 - For Well Plate Type (W):** Install the mixing sleeve into columns 2 and 8 of the plate.

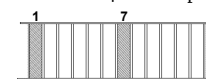
- Add 200 μ L of Sample



- Mixing Sleeve



- Add 200 μ L of Sample

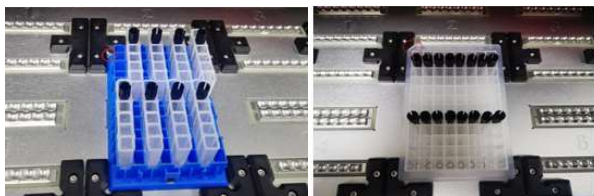


- Mixing Sleeve



- 4) **Insert to Device:** Insert the prefilled individual tube (on the cartridge rack) or the prefilled well plate into the heating tray.

- Individual Type (I)
- Well Plate Type (W)



Note: Insert it into the heating tray so that the sample loading wells are positioned on the far left. Incorrect insertion may result in an error and extraction failure.

- 5) **Program Selection:** Press the 'FaSTARprep' button on the 'LiliF' logo on the touch display to access the Protocol menu.
- 6) **Run Extraction:** Select the 'Viral DNA/RNA' or 'FaSTAR-XT fast' icon. Press the '>' button on the next screen to start.



Device Operation Notes:

- The system starts automatically and displays the remaining time.
- Press the 'Pause' button to force a stop after the current step is completed.
- If forced to stop, you cannot resume the current run; check the operation before re-testing.

- 7) **Elution & Storage:** After completion, transfer 80~90 µL of the Elution fraction to a new 1.5 ml Microtube.
For Individual Type (I): Collect from well 6.
For Well Plate Type (W): Collect from columns 6 and 12.
 Store the DNA/RNA at the appropriate temperature (4 °C : 1-2 days, -20 °C : 1-4 weeks, -70 °C : 1-6 months).

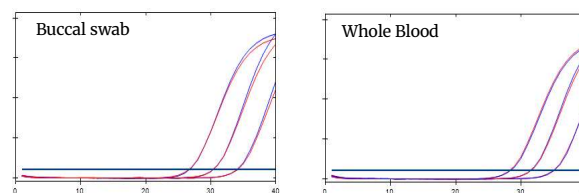
9. TROUBLESHOOTING GUIDE

Problem	Possible cause & Recommendation
The well plate vibrates and the liquid splashes when tearing off the foil sealing film.	When tearing the film, please press the well plate to prevent it from rocking. The reagent for this plate shall be scrapped, and re-extraction shall be performed.
Add the sample to unexpected wells.	Please read this manual carefully before adding samples. The reagent for this plate shall be scrapped, and re-extraction shall be performed.
The amount of liquid in the reagent wells is insufficient	Contact the after-sales service of iNtRON.
Reuse of pre-filled components	Please read the precautions in this manual before using the kit. Re-extraction of nucleic acid is performed.
Abnormal noise from the instrument during extraction	The mixing sleeve may not be inserted in place. Reinsert the stirring sleeve.
Poor extraction performance	Please follow operation requirements from the manual. Contact the after-sales service of iNtRON.

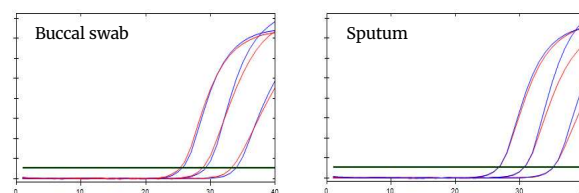
10. EXPERIMENTAL INFORMATION

※ **Experimental Data:** Amplification plot analysis of nucleic acid extracts from various samples

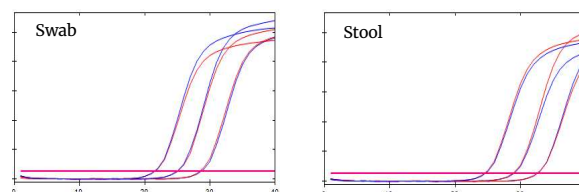
1) Pestivirus (20/2/0.2 TCID50)



2) β-Coronavirus (200/20/2 TCID50)



3) Rotavirus (200/20/2 TCID50)



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

- **Extraction Performance:** The FaSTAR-XT PGS DNA/RNA Kit demonstrated equal performance in both well plate type (W) and individual type (I).
- **Validation:** 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.
- **Amplification Plot Analysis:** Nucleic acid extracts from various samples successfully generated amplification plots for viruses including Pestivirus (20/2/0.2 TCID50), β-Coronavirus (200/20/2 TCID50), and Rotavirus (200/20/2 TCID50).

11. ORDERING INFORMATION

Product Name	Cat. No.
FaSTARprep96 Automated Nucleic Acid Extraction System	IMC-FAST-P96D
Patho Gene-spin™ HS DNA/RNA Extraction Kit	17156
G-spin™ Total DNA Extraction Kit	17045 (50 col.) 17046 (200 col.)
Maxime™ RT-PCR PreMix	25131
RealMOD™ Probe R ² 2X qRT-PCR mix (with UDG)	25362.100 (100 rxns) 25362.500 (500 rxns) 25362.1000 (1000 rxns)
RealMOD™ Probe R ² 2X qPCR mix (with UDG)	25363.200 (200 rxns) 25363.500 (500 rxns) 25363.1000 (1000 rxns)
RealMOD™ Green T ² 2X qRT-PCR mix (with UDG)	25365.100 (100 rxns) 25365.300 (300 rxns)
RealMOD™ Green T ² 2X qPCR mix (with UDG)	25364.200 (200 rxns) 25364.500 (500 rxns)