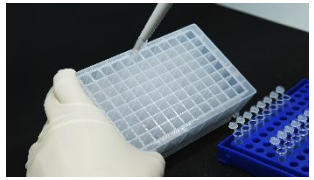
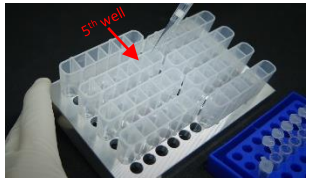
End of Run

Once extraction is completed, take tube rack out of the equipment and collect Plant DNA/RNA from **5th (11th) well** depending on where samples were dispensed.
Transfer eluent into 1.5 ml or PCR tube.
Amount of eluted buffer will be around 200 µl and it is ready to use.

Regular UV sterilization eliminates bacteria and virus, nucleic acid, hence it minimizes internal pollution within the system.
Before/after the extraction, touch UV Lamp button.
The sterilization process will continue for the time you set.

Troubleshooting Guide

Problem	Causes	Comments and Suggestions
Physical damage of the kit	Upside down during transportation may cause beads to stick with sealing film.	Spin down by hand the plate or strip by hand before open it.
	Sealing film is detached and reagent is spilled to other wells due to improper storage temperature.	Spin down by hand and measure reagent volume with eyes. If reagent volumes are insufficient, extraction efficiency may decrease. Do not use it and contact customer service immediately.
Magnetic rod function failure	Stain on the magnetic rod	Ensure the magnetic rod covers are inserted properly before extraction. Clean magnetic rods using 70% concentration of ethanol and clean with cloth.
Extractor malfunction	System is not working	Make sure system is plugged. Refer to user manual of GENTi™ Advanced for further details.
	Liquid spilled and adhered to system	Use UV light for sterilization and then clean with 70% concentration of ethanol.
	Collision	Improperly attached plate or strip may cause collision (between plate & strip, plate & system component and strip & system component). Turn off the device and make sure plate and strip are properly attached.
Abnormal extraction	Too much beads left in Elution buffer	If DNA/RNA density is normal, you may proceed with the eluted solution. If DNA/RNA density is low, pipette eluted solution to 1.5 ml or PCR tube and centrifuge before use.

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GENEALL BIOTECHNOLOGY CO., LTD

2022.01

Symbol	Used for	Symbol	Used for
LOT	Batch number		Manufacturer
REF	Catalogue number		Do not reuse
	Consult Instructions For Use		Date of Manufacture
	Caution		
	Temperature limitation		
	Expiry date		

Ver. 1.1

GeneAll®

Store at RT
Shelf life is 12 months after manufacturing

GENTi™ 32 ADVANCED
Plant DNA/RNA Extraction Kit (Single Tube Type/Plate Type)

Description

GENTi™ Advanced Plant DNA/RNA Extraction Kit utilize magnetic bead-based equipment, enables highly efficient nucleic acid extraction from a wide range of plant samples.
Maximum 32 and 16 samples (904-048A / 904-096A) are performed in deep well conical shaped bottom plate (tube), which enables precise fit with heating block and deliver the highest possible recovery of nucleic acids.
The purified Plant DNA/RNA is of excellent quality and suitable for most downstream applications, including PCR, qPCR, RT-PCR, NGS or any downstream application without further manipulation.

Kit Contents

Components	Quantity	
	904-096A	904-048A
Number of Preparation	96 tests/kit	48 tests/kit
Pre-filled with reagents	6 plate	48 Tube
Magnetic rod cover (6 pcs/pk)	2 pk	4 pk
Buffer EL	150 ml x 2	150 ml x 1
Buffer BR	150 ml x 2	150 ml x 1
Buffer SQ1	150 ml x 2	150 ml x 1
Nuclease-free water, 1ml	1 tube	1 tube

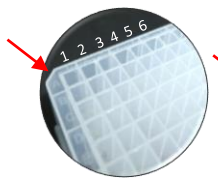
- 96 Deep-well plate pre-filled with reagents


- 8 Strip deep-well tube pre-filled with reagents

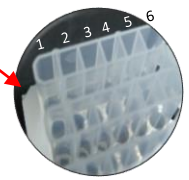

- Disposable magnetic rod cover

- GENTi™ Advanced instrument heat block

Brief Workflow



96 deep-well Plate



8 Strip deep-well tube

1. Lysis
2. Binding
3. Washing
4. Washing
   + Magnetic beads
5. Elution
6. Washing

- Conical shape of the plate, magnetic rod cover and heating block
- Heating block combined with the close fit of conical shaped material for fast and efficient heat transfer

- 6 consequent wells are aligned horizontally and each well contains specific reagents for extraction.
- 1st (7th)well contains lysis buffer which destroy cell membranes and bind Target DNA/RNA with magnetic beads.
- 2nd (8th)well contains binding buffer that help magnetic bead hold Target DNA/RNA.
- Magnetic bead is located at 4th (10th) well until the extraction begins and moves to first well by device once initiated.
- 3rd, 4th, 6th (9th, 10th, 12th) well contain washing buffer in order to remove unwanted cell component and buffers.
- Elution buffer in 5th (11th)well detaches Target DNA/RNA from magnetic bead and complete extraction process.
- If particles are not visible in well 4th (10th) shake down the cartridge to dislodge particles that may have adhered to the seal material before removing the seal.

Protocol

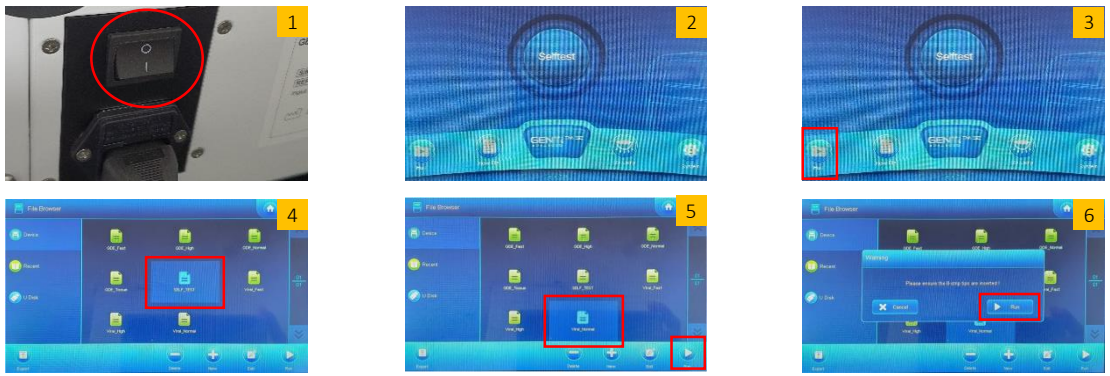
Protocol	Ex) Condition
Fast 11’ 02”	• Time-saving, high-speed extraction for diagnostics PCR-ready nucleic acid • Double check the accuracy of sample confirmed positive
Normal 19’ 50”	• Standard procedure of nucleic acid extraction • Optimized for nucleic acid extraction from a variety of leaf, root, bulb, bark sample
High 28’ 26”	• High quality nucleic acid extraction (Seed sample specific protocol) • Optimized for nucleic acid extraction from starch-enriched seed sample

Protocol Normal.

Step	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9
Well	4	1	2	3	4	6	6	5	4
Name	Bead TF	Lysis	Bind	Wash 1	Wash 2	Wash 3	Dry	Elution	Reclaim
Waiting	00:00	00:00	00:00	00:00	00:00	00:00	01:30	00:00	00:00
Mixing	00:00	05:00	00:50	00:50	00:30	00:30	00:00	03:10	00:10
Magnet	00:20 x 2	00:30 x 3	00:20 x 2	00:20 x 2	00:30	00:30	00:00	00:15 x 5	00:00
Volume	700	1000	700	700	700	700	100	100	50
Speed	Slow	Fast	Fast	Fast	Fast	Fast	Slow	Fast	Fast
Collet	Cycle	Cycle	Cycle	Cycle	Strong	Strong	Strong	Cycle	Strong

Heat Block	Lysis	Elution
Block Tm	35 ºC	85 ºC
Start step	-	Step 7
Stop step	Step 2	-

equipment Run

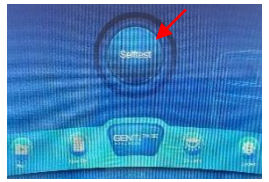


1. Turn on the **power switch** located on the right rear of the equipment.
2. Touch **‘RUN’** button when the home screen panels appear.
3. Select **‘Self Test’** at the File Browser screen and then touch ‘RUN’ button to run a self-test.
4. After self test completes, select **‘Plant_Normal ’** protocol and then touch ‘RUN’ button for the operation.

(Optimal protocol of the three options, 1)fast <11 min>, 2) Normal <20 min>, 3) HIGH <28 min>)

* Note : If ‘Warning’ screen appears, check system and touch ‘RUN’ button again.

Precautions for Use of equipment

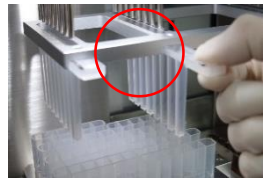


- Self-test

Automatic start self-test when the instrument is turned on

- Mounting Tube rack

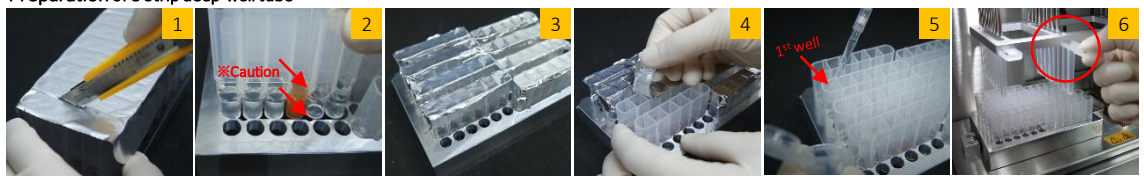
Be careful when mounting the tube rack on the equipment and gently mount it.



- Mounting magnetic rod cover

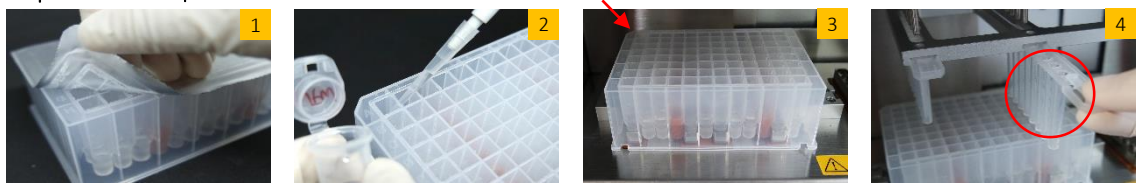
When installing the magnetic rod cover, push it to the end of equipment.

Preparation of 8 Strip deep-well tube



* (8 Strip deep-well tube) Cut the tube as much as necessary and install it in the GENTi™ Advanced Tube Rack.

Preparation of 96 Deep-well Plate



Sample preparation for leaf sample

1. Grind sample to a fine powder completely using a mortar and pestle under liquid nitrogen. Place up to 100 mg of ground sample into a 1.5 ml microcentrifuge tube (not provided). *Bark samples can be applied up to 1 g.
2. Add 200 µl Buffer EL and 200 µl Buffer BR to the sample and vortex vigorously for 15 sec.

** For startch-enriched samples, Add 300 µl of Buffer EL and 300 µl of Buffer BR.

*** For Bark samples, Add 3 ml of Buffer EL and 3 ml of Buffer BR.

3. Incubate the mixture for 3 min at room temperature.
4. Centrifuge the lysate at 13,000 rpm (≥10,000 x g) for 5 min at 4°C.
5. Transfer 200 µl of the supernatant to 1st (7th) well.
6. Load plate on the tray of GENTi™ Advanced equipment system.

* Note : Make it sure that diagonally cut edge of tube rack faces the top left of the heating block and check if the tube rack is placed evenly.

5. Insert magnetic rod cover to the end to strip bracket.

* Note : Ensure that magnetic rod cover is in the correct position.

Sample preparation for seed sample (starch-enriched samples)

1. Grind sample to a fine powder completely using a mortar and pestle under liquid nitrogen. Place up to 1 g of ground sample into a 15 ml tube (not provided).
2. Add 3 ml Buffer SQ1 and vortex vigorously for 15 sec.
3. Continue with step 4 in Sample preparation for leaf sample.