TIANGEN®

TGuide Smart Magnetic Plant RNA Kit

For purification of total RNA from plant tissues.

TECHNICAL MANUAL

Cat. no. 4993552

Note: To use the TGuide Smart Magnetic Plant RNA Kit, you must have the TGuide Smart Magnetic Plant RNA (program no. DP662) installed on the TGuide S16/S32 pro Nucleic Acid Extractor.

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This product is for scientific research use only. Do not use in medicine, clinical treatment, food or cosmetic

Table Contents

TGuide Smart Magnetic Plant RNA Kit

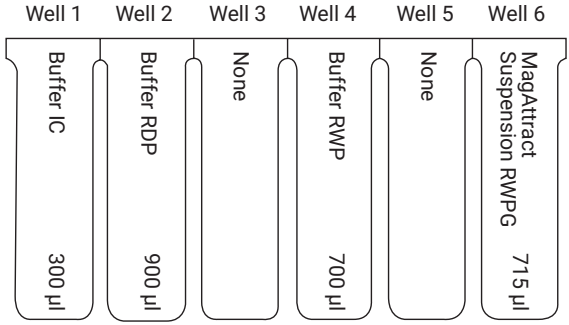
Cat. no. 4993552

Kit Contents

	Contents	4993552 (48 preps)
4993545	Buffer SL	30 ml×2
	Buffer RD	12 ml×2
	Plant RNA Reagents	48
	Proteinase K	1 ml
	RNase-Free ddH_2O	15 ml
4992232	Buffer RDD	4 ml
	RNase-Free ddH_2O	1 ml
	RNase-Free DNase I (1500 U)	1 pcs
4993546	TGuide Smart Tip Comb	12 pcs

Note: 4992232 ,4993546 are shipped and packaged separately

Plant RNA reagent composition



Storage condition

All components of the kit can be stored in dry conditions at room temperature (15~30°C) for 12 months. RNase-free DNase I, RDD buffer and RNase-free ddH_2O (in tubes) can be stored at 2~8°C for 15 months.

Product

This product adopts magnetic beads and a unique buffer system to isolate and purify high quality total RNA from plant tissues. The uniquely embedded magnetic beads have a strong affinity for nucleic acid under certain conditions. When the conditions are changed, the magnetic beads can release the absorbed nucleic acid to rapidly separate and purify it.

It can be used to perfectly fit with TGuide S16 Nucleic Acid Extractor. Through absorption, transfer and release of magnetic beads by the special magnetic bar, magnetic beads and nucleic acid can be transferred to improve the degree of automation. The whole process is safe and convenient. The total RNA extracted has good purity and high yield.

Total RNA purified by this kit can be used for RT-PCR, qPCR, chip analysis, Northern Blot, Dot Blot, PolyA screening, in vitro translation, RNase protection analysis, molecular cloning and other downstream experiments.

Features

- **Simple and fast:** Ultra-pure total RNA can be obtained by running TGuide S16 for 58 minutes.
- **Flexible throughput:** It can perfectly fit with TIANGEN TGuide S16 Nucleic Acid Extractor to extract 1-8 samples.
- **Safe and non-toxic:** No toxic reagents such as phenol/chloroform High purity: The RNA obtained has high purity and can be directly used in downstream experiments such as chip detection and high-throughput sequencing.

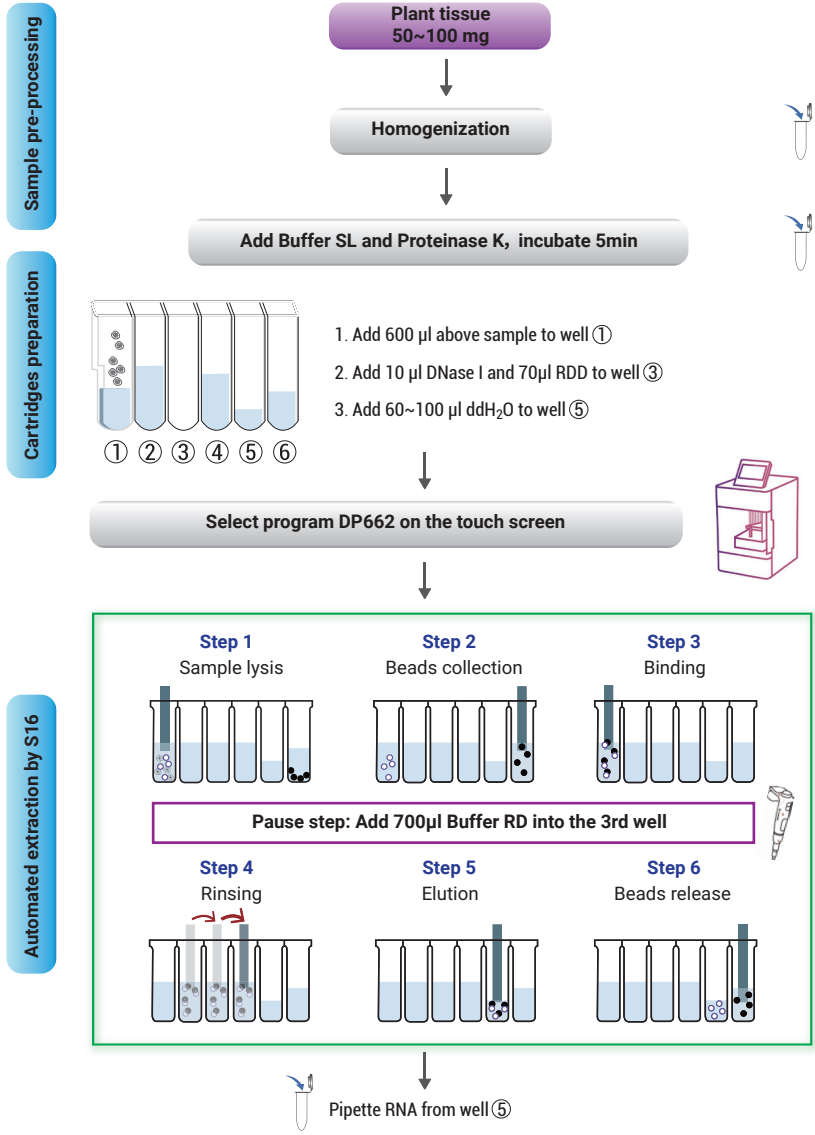
Notes

1. This product is suitable for TGuide S16 Nucleic Acid Extractor.
2. Pay attention to the pause step(~30mins after running program DP662). User needs to add 700 µl Buffer RD into the 3rd well manually before the program can resume.
3. Pay attention to the optimal storage and pre-processing conditions of samples to avoid degradation of extracted RNA.
4. If the TGrinder H24R tissue homogenizer is needed for electric homogenization of plant tissues, you could buy it and ask TIANGEN for a grinding scheme (OSE-TH-02).

Before the first use

1. Prepare DNase I stock solution : Dissolve the lyophilized DNase I (1500 units) in 550 µl of the RNase-free ddH_2O. Do not remove the rubber top of the vial to prevent loss of DNase I powder. Use a syringe and a needle to inject the RNaseFree ddH_2O into the vial. Mix gently by inverting. Do not vortex. Divide the solution into single-use aliquots, and store at -30~-15°C for up to 9 months. Thawed aliquots can be stored at 2-8°C for up to 6 weeks. Do not refreeze the aliquots after thawing.
2. Add absolute ethanol into Buffer RD according to the volume stated on the label of the bottle.

Operational steps



1. Prefilled single sample cartridge

   1.1 Take out a prefilled single sample cartridge and invert to re-suspend the magnetic beads; Gently shake to concentrate the reagent and magnetic beads to the bottom of the cartridge. Before use, remove sealing film carefully to avoid liquid spatter or spills.

   1.2 Add proper volume (60~100 μl) of RNase-Free ddH_2O to the 5th well of the cartridge.

2. Sample pre-processing:

   Note: For samples with rich polysaccharide content, such as pear leaves and strawberry leaves, it is not recommended to use this kit for extraction.

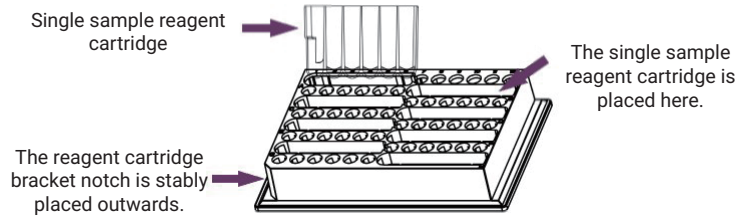
   Take fresh or -80°C frozen plant tissue and fully grind with liquid nitrogen into powder. Weigh 50~100 mg and add to a 1.5 ml centrifuge tube containing 700 μl Buffer SL (or use TIANGEN's TGrinder H24R tissue homogenizer for electric homogenization of plant tissues, and complete 1~24 plant samples for 1 min, without liquid nitrogen), to which, add 20 μl Proteinase K, for immediate vortex mixing. Let it stand it at room temperature for 5 min, centrifuge at 12000 rpm for 5 min, and carefully take the supernatant.

   Note: For samples with polysaccharides and polyphenols, it is recommended to increase the amount of buffer SL to 1 ml and take 600 μl supernatant after centrifugation for subsequent operations.

3. Start the TGuide S16 Nucleic Acid Extractor

   3.1 Add 600 μl supernatant obtained above to the 1st well of the cartridge. Add 10 μl pre-prepared DNase I stock solution with 70 μl Buffer RDD to the 3rd well. Place the cartridge on the reagent tank bracket of TGuide S16 Nucleic Acid Extractor.

   3.2 Place the reagent tank bracket on the plate base in the TGuide S16 Nucleic Acid Extractor. Insert the Tip Combs into the slots to ensure that they are well connected and firmed.



3.3 If you use the TGuide S16 Nucleic Acid Extractor, select the corresponding program DP662 file on the touch screen, click the icon ▶ in the lower right corner of the screen, or click the "RUN" button at the bottom of the screen to start the experiment.

3.4 At the pause step, add 700 µl Buffer RD into the 3rd well manually and then click "Confirm".

3.5 At the end of the automated extraction process, take the RNA out of the 5th well of the cartridge and store it under appropriate conditions. If there are subsequent experiments, it can be stored at 4°C for no more than 4 hours. Single sample reagent cartridge and tip comb are for single use only.

Appendix

1. Program

The extraction process of S16 provided for DP662 is shown in the following table:

Step	Hole site	Step name	Mix time (min)	Mix speed	Dry time (min)	Volume (µl)	Temp. (°C)	Segments	Every time (sec)	Magneti-zation time(sec)	Cycle	Magnet speed (mm/s)
1	6	Collect beads	0.5	7	0	715	--	5	3	0	2	2
2	1	Lysis	10	8	0	900	--	5	5	0	2	2
3	2	Wash 1	3	7	0	900	--	5	5	0	2	2
4	3	DNase I	12	3	0	80	--	1	0	0	0	--
5	3	Pause	Add 700 µl Buffer RD into the 3rd well									
6	3	Wash 2	5	7	0	780	--	5	5	0	2	2
7	4	Wash 3	3	7	0	700	--	5	5	0	2	2
8	6	Wash 4	3	7	6	700	--	5	5	0	2	2
9	5	Elution	5	7	0	80	45	5	5	3	2	2
10	6	Discard	0.5	5	0	715	--	1	0	0	0	--

2. Related Products

Instrument and Accessories

Product name	Packing Size	Cat.No
TGuide S16 Nucleic Acid Extractor	1 set	OSE-S16-AM
TGrinder H24R tissue homogenizer	1 set	OSE-TH-02
TGuide Smart Magnetic Tip Comb	200 pieces/box	4968939
TGuide Single Sample Tank Bracket	5 pieces/box	4993270

TGuide Smart Reagent Kits

Product name	Packing Size	Cat.No
TGuide Smart Magnetic Plant DNA Kit	48 preps	4993548
TGuide Smart Soil /Stool DNA Kit	48 preps	4993549
TGuide Smart Magnetic Tissue DNA Kit	48 preps	4993547
TGuide Smart DNA Purification Kit	48 preps	4993550
TGuide Smart Blood/Cell/Tissue RNA Kit	48 preps	4993551
TGuide Smart Blood Genomic DNA Kit	48 preps	4993703
TGuide Smart Viral DNA/RNA Kit	48 preps	4993702
TGuide Smart Universal DNA Kit	48 preps	4993704