TIANGEN®

TGuide Smart Magnetic Tissue DNA Kit

For genomic DNA purification from tissue and cells.

TECHNICAL MANUAL

Cat. no. 4993547

Note: To use the TGuide Smart Magnetic Tissue DNA Kit, you must have the TGuide Smart Magnetic Tissue DNA (program no. DP602) 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 Tissue DNA Kit

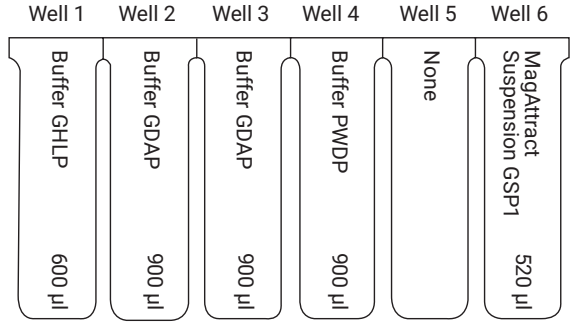
Cat. no. 4993547

Kit Contents

Contents		4993547 (48 preps)
4993540	Buffer GHA	30 ml
	Tissue DNA Reagents	48
	Proteinase K	1 ml
	RNase A (100 mg/ml)	200 μl
	Buffer TB	15 ml
4993546	TGuide Smart Tip Comb	12 pcs

Note: 4993546 is shipped and packaged separately

Tissue DNA reagent composition



Storage condition

The kit can be stored under dry conditions at room temperature (15~30°C) for 12 months. If the solution precipitates, it can be preheated in a water bath at 37°C for 10 min to dissolve the precipitation, without affecting the effect.

Product

This kit adopts magnetic beads and a unique buffer system to separate and purify high-quality genomic DNA from various animal tissues and cells . 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 the nucleic acid.

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, and the extracted genomic DNA fragments are large, with high purity and reliable quality.

The DNA purified by this kit is suitable for a range of common downstream applications including digestion, PCR, library construction, Southern hybridization, and other experiments.

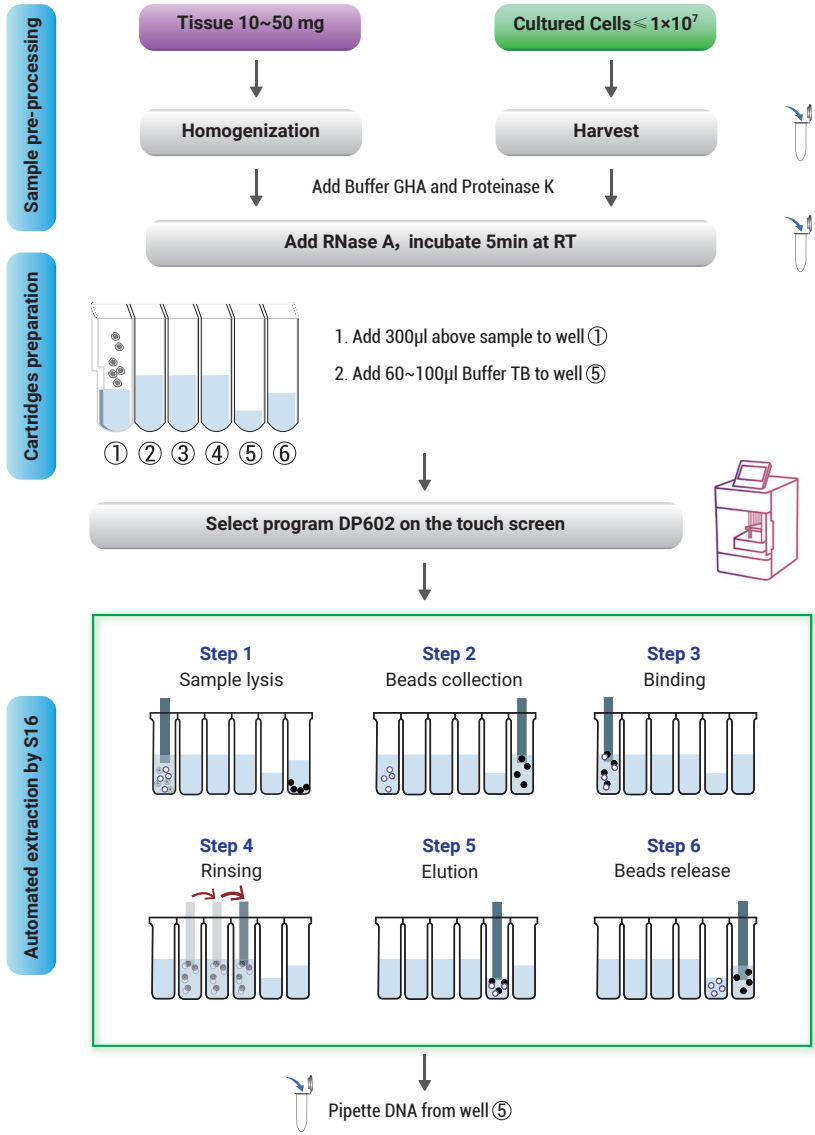
Features

- **Simple and fast:** Ultra-pure genomic DNA can be obtained by running TGuide S16 for 50 minutes.
- **Wide use:** It is applicable to all kinds of animal tissues.
- **Ultra-pure:** The obtained DNA has high purity and can be directly used in PCR, digestion, hybridization and other molecular biological experiments.

Note

1. Repeated freezing and thawing samples should be avoided, otherwise the extracted DNA fragments will be small and the total yield will decrease.
2. If there is precipitation in the Buffer GHA, it can be dissolved in a 37°C water bath and used after shaking well.

Operational steps



1. Prefilled single sample cartridge

1.1 Take out a prefilled single sample cartridge and invert it 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 buffer TB to the 5th well of the cartridge.

2. Sample processing

2.1 Tissue

Take 10~50 mg of animal tissue, use a liquid nitrogen or high-throughput tissue grinding homogenizer (TGrinder H24R tissue homogenizer, self-prepared, TIANGEN: OSE-TH-02) to adequately grind the tissue, or cut tissue into small pieces as much as possible, then add 400 µl Buffer GHA and 20 µl Proteinase K. Proceed to 3.1.

1) Samples with tissue blocks visible to naked eyes are recommended to be digested at 65°C for 30 min until completely digested;

2) Samples with sufficient homogenization do not need the above digestion process.

3) The rat tail samples should be digested overnight at 56°C.

Notes: After sample digestion, if there are tissue fragments, it is recommended to centrifuge at 12,000 rpm for 1 min to remove residual impurities. If RNA needs to be removed, add 4 µl RNase A (100 mg/ml) to the supernatant solution after centrifugation, and place it at room temperature for 10 min.

2.2 Cell

1) Processing methods of different cell samples:

(1) Suspension cell: Determine the number of cells collected (the collected number should not be more than 1×10^7) and centrifugate at 300 × g for 5 min. Then collect cells into a centrifuge tube and carefully remove all supernatant of the culture medium. Wash the cells with PBS solution, and then suck out the PBS solution as much as possible. Add 100 µl PBS to the cells, and completely re-suspend the cells.

(2) Adherent cell: Determine the number of cells and remove the culture medium. Wash cells with the PBS solution, and suck out the PBS solution. Then add the PBS solution containing 0.10~0.25% trypsin to cells for digestion. When the cells are released from the wall of the vessel, add a medium containing serum to inactivate the trypsin. Transfer the cell solution to an RNase-free centrifuge tube and centrifuge it at 300 × g for 5 min. Collect cell pellets and carefully remove all supernatant. Add 100 µl PBS to the cells, and completely re-suspend the cells.

Note: When collecting cells, it is important to remove all cell culture medium;

otherwise, it will lead to incomplete digestion.

2) Add 200 µl Buffer GHA and 20 µl Proteinase K to the collected cell pellets, and completely re-suspend the cells.

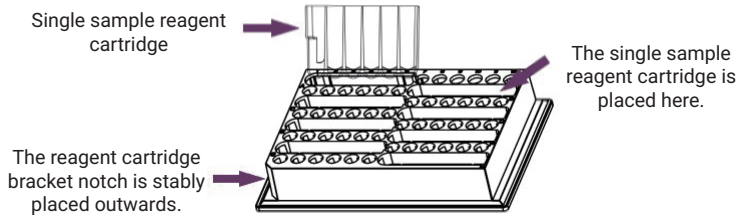
Note. To remove RNA, add 4 µl RNaseA (100 mg/mL), shake it for 15 sec, and incubate at room temperature for 5 min.

3) Proceed to 3.1.

3. Operation steps of TGuide S16 Nucleic Acid Extractor

3.1 Add 300 µl solution after processing the above sample in the 1st well of the cartridge. Put cartridges 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 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 DP602 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 end of the automated extraction process, take the DNA out of the 5th well of the cartridge and store it under appropriate conditions. Single sample reagent cartridge and tip comb are for single use only.

Detection of DNA concentration and purity

The size of the obtained genomic DNA fragment is affected by the sample storage time and shear force during operation. The concentration and purity can be detected by agarose gel electrophoresis and UV spectrophotometer. Ideally, the DNA should absorb at most at OD260, where an OD260 value of 1 corresponds to approximately 50 µg/ml double strand DNA and 40 µg/ml single strand DNA.

The OD260/OD280 ratio should be 1.7~1.9. The value will be lower if the deionized water is used instead of the eluting buffer. This is because the pH and existing ion can affect the light absorption value, but it doesn't indicate low purity.

Appendix

1. Program

The extraction process of S16 provided for DP602 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	1	Lysis	2	8	0	900	--	1	0	0	0	--
2	6	Collect beads	0.5	8	0	500	--	5	3	0	2	2.5
3	1	Bind	10	8	0	900	--	5	4	0	2	2.5
4	2	Wash 1	5	7	0	900	--	5	3	0	2	2.5
5	3	Wash 2	5	7	0	900	--	5	3	0	2	2.5
6	4	Wash 3	5	7	5	900	--	5	3	0	2	2.5
7	5	Elution	10	7	0	100	75	5	5	0	2	2.5
8	6	Discard	0.5	5	0	500	--	1	0	0	0	--

2. Related Products

Instrument and Accessories

Product name	Packing Size	Cat.No
TGuide S16 Nucleic Acid Extractor	1 set	OSE-16-AM
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 Plant RNA Kit	48 preps	4993552
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