Stool/Soil DNA Extraction Kit

V202511

（BW-MGD2430）

Product Introduction

This product is specifically designed for DNA extraction from environmental samples. The kit adopts magnetic bead-based purification technology combined with the original humic acid adsorbent technology, making it suitable for extracting high-yield and high-purity total DNA from various samples such as soil, feces, food, residues, and sediment. The purified DNA can be directly used in experiments including PCR, Southern hybridization, and restriction enzyme digestion.

Product Components

Bottled Reagents

Catalog#	A00-10	A00-11
Preps	50T	250T
Zirconia beads	250 pieces	1250 pieces
Particles	2 mL	10 mL
Buffer SOL	60 mL	300 mL
Buffer SDS	6 mL	30 mL
Reagent DX	1 mL	5 mL
Buffer PS	10 mL	50 mL
Buffer GXP	70 mL	350 mL
Buffer BW1*	22 mL	110 mL
Elution Buffer	40 mL	200 mL
User Manual	1 份	1 份

Storage and Stability

The product is transported at room temperature, and the kit has a validity period of 12 months.

Pre-aliquoted Reagents, Plate

Catalog#	Pre-dispensed reagents and Filling Volume	A32-10	A32-11	A32-12
Preps		1×32T	10×32T	20×32T
Zirconia beads		160 pieces	1600 pieces	3200 pieces
Buffer SOL		45 mL	450 mL	900 mL
Buffer SDS		5 mL	50 mL	100 mL
Reagent DX		0.8 mL	8 mL	16 mL
Buffer PS		8 mL	80 mL	160 mL
8-strip Tip Comb		4 Preps	40 Preps	80 Preps
Preloaded Reagent Plate	Row 1/7 Wells: 500µL GDP Buffer Row 2/8 Wells: 500µL GDP Buffer Row 3/9 Wells: 500µL BW1 Buffer Row 4/10 Wells: 500µL GW2 Buffer30µL Particles Row 5/11 Wells: 500µl GW2 Buffer Row 6/12 Wells: 90µl Elution Buffer	2 Plates	20 Plates	40 Plates

Materials to be Prepared by the User

- 75% Ethanol
- Dilute Buffer BW1 with anhydrous ethanol (Ethanol:BW1=14:11)
- 2 mL homogenization tube

Part 1: Sample Lysis and Digestion

- Prepare Buffer SOL Plus: Before the experiment, take a new centrifuge tube, add 50µL Buffer SDS and 5µL Reagent DX to 1mL Buffer SOL, and invert to mix thoroughly.
- **Preparation of Homogenization Tube:**Add approximately 5 pieces of zirconia beads to a 2mL centrifuge tube or a screw-cap centrifuge tube (thick-walled).

1. Perform Sample Pretreatment According to the Sample Type.According to laboratory conditions, select bead beating for lysis.

- **Solid Samples (Soil Type):** In a 2mL homogenization tube, add 0.25–0.5g of soil, and then add 0.8mL Buffer SOL Plus.
- **Solid Samples (Fecal Type):** In a 2mL homogenization tube, add 50~150mg of fecal sample, and then add 1.2mL Buffer SOL Plus.

- **Solid Samples (Food, Fermented Solids, Other Environmental Samples):** In a 2mL homogenization tube, add 0.2g of food, fermented residue, or environmental sample, and then add 1.0mL Buffer SOL Plus.Vortex Mixer: Transfer the prepared samples to a vortex mixer (e.g., MagMix A) and vortex thoroughly at maximum speed for 10 minutes.

2. According to laboratory conditions, select bead beating for lysis.3. Incubate in a water bath at 65°C for 20 minutes. Centrifuge at 13,000 x g for 3 minutes.

- **Vortex Mixer:** Transfer the prepared samples to a vortex mixer and vortex thoroughly at maximum speed for 10 minutes.
- **Bead Beater:** Transfer the prepared samples to a bead beater for bead beating. Example: When using FastPrep-24® (MP), the recommended speed is 6.0, the duration is 60 seconds, and perform bead beating twice.

3. Incubate in a water bath at 65°C for 20 minutes. Centrifuge at 13,000 x g for 3 minutes.
4. Transfer 0.5mL of supernatant to a new centrifuge tube. Add 150µL Buffer PS and vortex for 10 seconds. Add 150µL Absorber Solution, vortex thoroughly for 10 seconds, and incubate on ice for 10 minutes.
5. Centrifuge at 13,000 x g for 10 minutes, then transfer 600µL of supernatant to a 2.0mL centrifuge tube.

Protocol 1: Manual Single-Tube Operation

1. In a 1.5mL centrifuge tube, add 30µL MagPure Particles and 600µL Buffer GDP.
2. Transfer 500~600µL of the supernatant prepared in Part 1 (Step 5) to the centrifuge tube containing Buffer GDP and magnetic beads. Invert to mix 10-15 times, incubate at room temperature for 5~10 minutes, and vortex several times during incubation. Transfer to a magnetic rack to adsorb for 2 minutes, then discard the solution by pouring or aspiration.
3. Add 500µL Buffer GDP and vortex for 10 seconds. Transfer to a magnetic rack to adsorb for 1 minute, then discard the solution by pouring or aspiration.
4. Add 600µL Buffer BW1 and vortex for 10 seconds. Transfer to a magnetic rack to adsorb for 1 minute, then discard the solution by pouring or aspiration.
5. Add 600µL 75% ethanol and vortex for 10 seconds. Transfer to a magnetic rack to adsorb for 1 minute, then discard the solution by pouring or aspiration.
6. Add 600µL 75% ethanol and vortex for 10 seconds. Transfer to a magnetic rack to adsorb for 1 minute, then discard the solution by pouring or aspiration.
7. Perform brief centrifugation to collect droplets on the tube wall, transfer to a magnetic rack, and aspirate the residual liquid completely. Air-dry for 10 minutes.
8. Add 100µL Elution Buffer and vortex to disperse the magnetic beads. Shake and incubate at 55ºC for 10 minutes. If no shaking incubation is available, vortex 2~3 times during incubation to accelerate DNA dissolution.
9. Transfer to a magnetic rack to adsorb for 5 minutes, then transfer the DNA to a new centrifuge tube.

Protocol 2: 32/48-Channel Nucleic Acid Extraction Instrument Operation

1. Bottled Reagents: According to the pre-aliquoted reagents table, dispense each reagent into the corresponding wells of a 96-well plate. Pre-aliquoted Reagents: Invert the 96-well plate to

fully resuspend the magnetic beads, place it upright for 1 minute, then remove the sealed bag and sealing film.

2. Add 500μL of the supernatant (Part 1 Step 5) to the wells in Row 1/7.
3. Insert the 8-strip Tip Comb into the instrument, then place the 96-well plate in the instrument with the A1 well aligned to the top-left corner.
4. Program the instrument and start the corresponding program. The extraction is complete in approximately 30 minutes.
5. Remove the 96-well plate and 8-strip Tip Comb.
6. Transfer the DNA to 1.5ml centrifuge tubes, and store the product at -20~8℃.

16/32/48-Channel Nucleic Acid Extraction Instrument Parameters(ALL SHENG Auto-Pure 32A)

Steps	Well Position	Name	Mix Time (min)	Magnet (sec)	Waiting Time (min)	Vol. (μL)	Mix Speed (1-10)	Temp. (℃)	Mix pos (0-100%)	Mix amp (1-100%)	Magnet pos (0-100%)	Magnet speed (1-10)
1	4	Beads	0.5	60	0	400	8	OFF	0	80	0	1
2	1	Bind	5.0	90	0	800	8	OFF	0	80	0	1
3	2	Wash1	1.5	90	0	400	8	OFF	0	80	0	1
4	3	Wash2	1.0	60	0	400	8	OFF	0	80	0	1
5	4	Wash3	1.0	60	0	400	8	OFF	0	80	0	1
6	5	Wash4	1.0	60	0	400	8	OFF	0	80	0	1
7	5	Dry	0.0	0	6.0	5	1	OFF	0	80	0	1
8	6	Elute	6.6	60	0	100	9	55	0	80	0	1
9	5	Drop	0.5	0	1.0	500	9	OFF	0	80	0	1
1	6	Elute	1.0	90	0	100	9	OFF	0	80	0	1
1	5	Drop	0.5	0	0	500	9	OFF	0	80	0	1

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