Stool/Soil DNA Extraction Kit

V202512

（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#	A00-00	A00-01
Preps	50	250
Zirconia beads	250 pieces	1250 pieces
Particles N	2 mL	10 mL
Buffer SOL	50 mL	250 mL
Buffer SDS	5 mL	25 mL
Buffer PS	10 mL	50 mL
Buffer GDP	55 mL	275 mL
Buffer SW1	35 mL	175 mL
Elution Buffer	10 mL	50 mL
User Manual	1 份	1 份

Storage and Stability

All reagents of this product can be transported at room temperature, with a validity period of 12 months.

Pre-aliquoted Reagents, Plate

Catalog#	A32-00	A32-01	A32-02
Preps	1×32T	10×32T	20×32T
Zirconia beads	160 pieces	1600 pieces	3200 pieces
Buffer SOL	32 mL	320 mL	640 mL
Buffer SDS	3 mL	30 mL	60 mL
Buffer PS	6 mL	60 mL	120 mL
8-strip Tip Comb	4 Preps	40 Preps	80 Preps
Pre-aliquoted Reagents	2 Plates	20 Plates	40 Plates
Content of Pre-aliquoted Reagents		Row 1/7 Wells: 500µL Buffer GDP Row 2/8 Wells: 500µL Buffer GDP Row 3/9 Wells: 500µL SW1 Row 4/10 Wells: 500µL Buffer SW2 /30µL Particles N Row 5/11 Wells: 500µL Buffer SW2 Row 6/12 Wells: 100µL Elution Buffer	

Materials to be Prepared by the User

- 75% Ethanol
- 2 mL homogenization tube

Part 1: Sample Lysis and Digestion

- **Preparation of Homogenization Tube:**Add approximately 5 pieces of zirconia beads to a 2mL centrifuge tube or a screw-cap centrifuge tube (thick-walled).
- **Preparation of Buffer SOL Plus:**Add in proportion. For example, add 7 mL of Buffer SDS to 100 mL of Buffer SOL, and add 4.2 mL of Buffer SDS to 60 mL of Buffer SOL. During storage of SDS in Buffer SOL, SDS will precipitate. Before use, incubate at 37-55℃ for 3-5 minutes to dissolve it, then invert and mix well before use.

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

- **Solid Samples (Soil Type):** In a 2 mL homogenization tube, add 0.5g of soil, and then add 0.8mL Buffer SOL Plus.
- **Solid Samples (Fecal Type):** In a 2 mL homogenization tube, add 50~150mg of fecal sample, and then add 1 mL Buffer SOL Plus.
- **Solid Samples (Food, Fermented Solids, Other Environmental Samples):** In a 2 mL homogenization tube, add 0.2g of food, fermented residue, or environmental sample, and then

add 0.8 mL Buffer SOL Plus.

2. According to laboratory conditions, select bead beating for lysis.

- **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 15 minutes. Centrifuge at 13,000 x g for 3 minutes.
4. Transfer 0.6 mL of supernatant to a new centrifuge tube. Add 150 µL Buffer PS and vortex for 10 seconds. Centrifuge at 13,000 x g for 10 minutes.(Process biological samples with low solid content, such as swab soaking solution, liquid, exfoliated cell suspension, cultured bacterial solution, plasma, homogenate, etc.After water bath, briefly collect the droplets. Then directly add 150 µL Buffer PS into the homogenization tube, vortex to mix well, and centrifuge afterwards.)

Part 2: Manual Single-Tube Operation

1. Transfer 400~500 µL of the supernatant (from Part 1) into a new centrifuge tube. Add 500 µL of Buffer GDP and 30 µL of MagPure Particle N, invert to mix thoroughly for 10-15 times, and let it stand at room temperature for 5 minutes with vortex mixing several times during this period. Transfer the tube to a magnetic rack for adsorption for 3 minutes, then discard the solution by pouring or aspiration..(For processing animal tissues rich in DNA, whole blood, saliva, culture medium, etc., only 400 µL of the supernatant needs to be transferred. This product adopts high-salt mediated adsorption, with a maximum yield of no more than 15 µg. Excess DNA that exceeds the loading capacity cannot bind and will be removed along with the waste liquid.)
2. Add 500 µL of Buffer GDP, vortex for 15 seconds, then invert and mix thoroughly 15–30 times. Transfer the tube to a magnetic rack for adsorption for 2 minutes, then discard the solution by pouring or aspiration. Perform a brief centrifugation to collect the residual liquid, and then aspirate to remove all residual liquid completely.
3. Add 500 µL of Buffer SW1 and vortex for 10 seconds. Transfer the tube to a magnetic rack for adsorption for 1 minute, then discard the solution by pouring or aspiration.
4. Add 900 µL of 75% ethanol and vortex for 10 seconds. Transfer the tube to a magnetic rack for adsorption for 1 minute, then discard the solution by pouring or aspiration.
5. Add 900 µL of 75% ethanol and vortex for 10 seconds. Transfer the tube to a magnetic rack for adsorption for 1 minute, then discard the solution by pouring or aspiration.
6. Perform a brief centrifugation to collect the droplets on the tube wall, transfer the tube to a magnetic rack, and aspirate all residual liquid completely. Air-dry for 10 minutes.
7. Add 60~100 µL of Elution Buffer and vortex to disperse the magnetic beads. Incubate with shaking at 55ºC for 10 minutes. If shaking incubation is not available, vortex to mix 2~3 times during this period to accelerate DNA dissolution.
8. Transfer to a magnetic rack for adsorption for 3 minutes, then transfer the DNA to a new

centrifuge tube.

Part 3: 32/48-Channel Nucleic Acid Extraction Instrument Operation

1. Bottled Reagents: According to the pre-aliquoted reagent table, aliquot each type of reagent into the corresponding wells of the 96-well plate.

   Pre-aliquoted Reagents: First, shake the 96-well plate to fully resuspend the magnetic beads. After placing it upright for 1 minute, remove the sealed bag and the sealing film.
2. Add 400~500 μL of the supernatant (Part 1) to the corresponding wells in Row 1/Row 7.(For processing animal tissues rich in DNA, whole blood, saliva, culture medium, etc., only 400 μL of the supernatant needs to be transferred. This product adopts high-salt mediated adsorption, with a maximum yield of no more than 15 μg. Excess DNA that exceeds the loading capacity cannot bind and will be removed along with the waste liquid.)
3. Insert the 8-strip Tip Comb (flat-bottom magnetic jacket) into the instrument. Place the 96-well plate into the instrument (align the A1 well with the left inner corner)
4. Remove the 96-well plate and the magnetic jacket. Transfer the DNA into a 1.5 mL centrifuge tube, and store the product at -20~8℃.

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	0.3	60	0	500	7	OFF	0	80	0	1
2	1	Bind	5.0	60	0	900	7	OFF	0	80	0	1
3	2	Wash1	2.0	60	0	500	8	OFF	0	80	0	1
4	3	Wash2	1.5	60	0	500	8	OFF	0	80	0	1
5	4	Wash3	1.0	60	0	500	8	OFF	0	80	0	1
6	5	Wash4	1.0	60	0	500	8	OFF	0	80	0	1
7	5	Dry	0.0	0	3.0	500	1	OFF	0	80	0	1
8	6	Elute	8.0	90	0	100	9	55	0	80	0	1
9	5	Drop	0.3	0	.0	500	9	OFF	0	80	0	1

Hangzhou Beiwo Medical Technology Co. Ltd. Address: Room 101 Block 1, #2636
Zhejiang Province, P.R. China
TEL:+86-571 5639 1588, +86-400 115 2855
E-Mail:market@beiwobiomedical.com
Website:http://www.beiwobiomedical.com/