MagPure Soil DNA Kit

Introduction

This product allows rapid and reliable isolation of high-quality genomic DNA from various soil , stool, and other environmental samples. Up to 500 mg soil, 100mg Stool, or 0.5g environmental samples can be processed in 60 minute. Purified DNA is suitable for PCR, restriction digestion, and next-generation sequencing.

Principle

This product is based on the purification method of high binding magnetic particles.Soil sample is homogenized and then treated in a specially formulated buffer containing detergent to lyse bacteria, yeast, and fungal samples. Humic acid, proteins, polysaccharides, and other contaminants are removed using our propietary Absorber Solution. After adding magnetic particles and binding solution, DNA will be adsorbed on the surface of magnetic particles, and impurities such as proteins will be removed without adsorption. The adsorbed particles were washed with washing buffer to remove proteins and impurities, washed with ethanol to remove salts, and finally DNA was eluted by Elution Buffer.

Kit Contents

Product	D635601	D6365602	D635603
Preps per Kit	48 Preps	96 Preps	5 x 96 Preps
MagPure Particles	2.5 ml	5 ml	22 ml
2ml Bead Tubes	48	96	400
Buffer SOL	60 ml	100 ml	500 ml
Buffer SDS	6 ml	10 ml	50 ml
Reagent DX	1 ml	1 ml	5 ml
Buffer PS	10 ml	20 ml	90 ml
Absorber Solution	10 ml	20 ml	90 ml
Buffer GDP	70 ml	150 ml	2 x 350 ml
Buffer GW1 *	22 ml	44 ml	220 ml
Elution Buffer	20 ml	20 ml	60 ml

Storage and stability

MagPure Particles and Absorber Solution should be stored at 2 – 8° C upon arrival. However, short-term storage (up to 12 weeks) at room temperature (15 – 25° C) does not affect their performance. The remaining kit components can be stored dry at room temperature (15 – 25° C) and are stable for at least 18 months under these conditions.

Materials and Equipment to be Supplied by User

- Heat block or water bath capable of 65℃
- 75% ethanol
- Dilute Buffer GW1 with 28ml (48 Preps), 56ml (96 Preps) or 280ml (5 x 96 Preps) 100% ethanol and store at room temperature

Manual Protocol

1. Transfer 250-500mg soil sample, 0.1g stool sample, or 0.1-0.5mg environmental samples to 2ml Bead Tubes.
2. Add 700µL Buffer SOL, 70µL Buffer SDS and 5µL Reagent DX to the sample.
3. Lyse sample by vortex at maximum speed for 10 minutes or by Fastpreps 24 (6.5 m/s twice for 45s). Then incubate at 65oC for 10 minutes.

   Before use, mix Buffer SOL, Buffer SDS and Reagent DX and mix well. After preparation, the mixture is stable for 6 months at room temperature. When processing multiple samples, we recommend using Magen's Magmix A shaker, which can process up to 20 samples at a time.
4. Centrifuge at 13,000 x g for 3 min at room temperature.
5. Transfer 500µL supernatant into a new 1.5 mL microcentrifuge tube (not provided).
6. Add 125µL Buffer PS and vortex to mix thoroughly.
7. Add 125µL Absorber Solution and vortex to mix thoroughly. Let sit on ice for 5 minutes and centrifuge at maximum speed (⩾13,000 x g) for 5 min.
8. Transfer 600µl supernatant to a new 2.0ml microentrifuge tube.

9. **Add 40µl MagPure Particles and 700µl Buffer GDP to each well.** Mix well by inverting. Incubate for 5 min with occasionally inverting to mix. Place the tube to the magnetic stand for 1 minutes until the beads have formed a tight pellet. Then remove the supernatant.
10. **Add 500µl Buffer GDP** and vortex for 15 seconds to re-suspend beads. Place the tube to the magnetic stand for 1 minute until the beads have form a tight pellet. Then remove the supernatant.
11. **Add 750µl Buffer GW1** and vortex for 15 seconds to re-suspend beads. Place the tube to the magnetic stand for 1 minute until the beads have form a tight pellet. Then remove the supernatant.
12. **Add 750µl 75% ethanol,** and vortex for 15 seconds to re-suspend beads. Place the tube to the magnetic stand for 1 minute until the beads have form a tight pellet. Then remove the supernatant.
13. Repeat step 12.
14. Centrifuge shortly to collect liquid on the tube. Place the tube to the magnetic stand and remove all the liquid carefully. Air Dry for 10 minutes.
15. **Add 50~100µl Elution Buffer to the sample,** re-suspend the beads by vortex. Incubate at 55°C for 10 minutes by shaking. If there is no shaking device, vortex 2~3 times to mix DNA with magnetic particles.
16. Place the tube to the magnetic rack for 2 minutes. Transfer the supernatant containing the purified DNA to a clean 1.5ml centrifuge tube.

Auto Purify by KingFisher Flex

1. **Transfer 250-500mg soil sample, 0.1g stool sample, or 0.1-0.5mg environmental samples to 2ml Bead Tubes.**
2. **Add 600µL Buffer SOL, 60µL Buffer SDS and 4µL Reagent DX to the sample.**
3. Lyse sample by vortex at maximum speed for 10 minutes or by Fastpreps 24 (6.5 m/s twice for 45s). Then incubate at 65oC for 10 minutes.

   Before use, mix Buffer SOL, Buffer SDS and Reagent DX and mix well. After preparation, the mixture is stable for 6 months at room temperature. When processing multiple samples, we recommend using Magen's Magmix A shaker, which can process up to 20 samples at a time.
4. Centrifuge at 13,000 x g for 3 min at room temperature.

5. Transfer 400μL supernatant into a new 1.5 mL microcentrifuge tube (not provided).
6. Add 100μL Buffer PS and 100μL Absorber Solution and vortex to mix thoroughly.
7. Let sit on ice for 5 minutes and centrifuge at maximum speed (≥13,000 x g) for 10 min.
8. Add the Reagents/sample to the wells of the deep well plate according to the table below.

Name of the Plate	Reagents	supernatant
Sample Plate	500μl Buffer GDP	500μl supernatant from step 8.
Wash Plate 1	500μl Buffer GDP, 96 magnetic Tip 40μl MagPure Particle	
Wash Plate 2	750μl Buffer GW1	
Wash Plate 3	750μl 75% ethanol	
Wash Plate 4	750μl 75% ethanol	
Elution plate	100μl Elution Buffer	

9. Turn on the machine, start the corresponding program.
10. Place the 96-well plate into the instrument as prompted.
11. Finish the operation after ~40 minutes.
12. Remove the 96-well plate and magnetic jacket.
13. Store the Elute product at -20~8℃.