MagicPure® Soil Genomic DNA Kit

Please read the datasheet carefully prior to use.

Cat. No. EC802-11

Version No. Version 2.0

Storage: at room temperature for one year (15-25°C); Humic Acid Removal at 2-8°C for one year.

Description

MagicPure® Soil Genomic DNA Kit is a universal reagent designed for DNA purification from various soil samples. It employs a unique lysis solution to break down solid or liquid samples rich in impurities and inhibitors, followed by efficient humic acid removal, and utilizes magnetic beads for specific DNA adsorption. The extracted DNA can be used for a variety of molecular biological experiments including PCR, qPCR, and next-generation sequencing. This kit is compatible with magnetic rod-based high-throughput nucleic acid extractors.

Features

- Easy to use, cumbersome steps such as heating or ice bathing are not required.
- Efficiently remove inhibitors from samples to produce high purity DNA.
- Suitable for various types of soil samples.

Sample Requirements

Fresh or frozen soil samples, avoiding repeated freeze-thaw cycles.

Kit Contents

Component	EC802-11 (50 rxns)
Lysis Buffer 53 (LB53)	40 ml
Lysis Enhancer 2 (LE2)	2.5 ml
Reagent DF	300 µl
Precipitation Buffer 53 (PB53)	12 ml
Humic Acid Removal (HAR)	10 ml
Binding Buffer 53 (BB53)	30 ml
Clean Buffer 31 (CB31)	40 ml
Wash Buffer 31 (WB31)	20 ml
Elution Buffer (EB)	10 ml
Lysis Tube	50
Magnetic Soil Beads II	900 µl

Preparation before experiment

- Add absolute ethanol (self-provided) to CB31 and WB31 (specific volumes are listed in the table below).

Component	Volume
Clean Buffer 31 (CB31)	10 ml absolute ethanol
Wash Buffer 31 (WB31)	80 ml absolute ethanol

- Self-provided: 1.5 ml centrifuge tubes

Protocol

(1) Transfer 0.25-0.5 g of soil sample into a Lysis Tube. Add 700 µl LB53, 40 µl LE2 and 2 µl Reagent DF. Tighten the lid and grind sample.

* Choose one method to grind the sample.

a. Vortex mixer: Place the Lysis Tube on the vortex mixer and vortex at maximum speed for 10 minutes.

b. Grinder: Place the Lysis Tube on grinder and select the appropriate program for lysis. If using FastPrep-24 Instrument from MP company, the recommended program is 6.0 m/s, on 60 sec, 2 cycles. If using other brands of high-throughput grinders, the recommended program is 45HZ, 3-5 minutes.

(2) Centrifuge at 12,000×g for 3 minutes, and pipet up to 600 μl of the supernatant into a new 1.5 ml sterile centrifuge tube (self-provided).

(3) Add 200 μl PB53 and 150 μl HAR, vortex to mix, and centrifuge at 12,000×g for 3 minutes.

(4) Pipet 500-600 μl of supernatant into a new 1.5 ml sterile centrifuge tube (self-provided). Add 500 μl BB53 and mix well.

* Avoid pipetting any white precipitate or sediment at the bottom when transferring supernatant.

(5) Pipet 15 μl of magnetic beads (vortex thoroughly before use) into the tube, vortex for 5 minutes, and place the tube on a magnetic stand until the solution clears.

* Recommendation: After placing the centrifuge tube on the magnetic stand, gently invert the magnetic stand up and down and rotate the centrifuge tube left and right to make all the magnetic beads gather on one side of the magnetic stand.

(6) Carefully discard the supernatant (avoid pipetting magnetic beads), add 800 μl CB31, vortex for 5 minutes, and place the centrifuge tube on a magnetic stand until the solution is clear.

(7) Carefully discard the supernatant (avoid pipetting magnetic beads), add 700 μl WB31, vortex for 3 minutes, and place the centrifuge tube on a magnetic stand until the solution is clear.

(8) Repeat step (7) once.

(9) Discard the supernatant as much as possible, air dry at room temperature for 5-10 minutes to allow ethanol to evaporate completely.

(10) Add 50-100 μl of EB, pipet to mix, and incubate at 65°C for 5 minutes (pipet 2-3 times to mix during incubation).

(11) Place the tube on a magnetic stand for magnetic separation, carefully transfer the supernatant to a new sterile centrifuge tube (self-provided), and store at -20°C.

Note

- To ensure the quality of extracted nucleic acid, avoiding repeated freeze-thaw cycles.
- It is recommended to homogenize samples before weighing and extracting it.
- Vortex the magnetic beads thoroughly before use.
- Use Nuclease-free sterile centrifuge tubes and pipette tips to avoid DNase contamination.

For research use only, not for clinical diagnosis

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