MagicPure® Soil and Stool Genomic DNA Kit

Please read the manual carefully before use.

Cat. No. EC801

Version No. Version 2.0

Storage: at 15-30°C for one year; Humic Acid Removal 56 at 2-8°C for one year.

Description

MagicPure® Soil and Stool Genomic DNA Kit is a universal reagent designed for DNA purification from various types of soil and stool samples. It employs a unique lysis solution to lyse 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 various common molecular biological experiments, such as PCR, qPCR, next-generation sequencing, etc. This kit is compatible with magnetic rod-based high-throughput nucleic acid extractors.

Features

• User-friendly design eliminates cumbersome steps such as heating or ice bathing.

• Efficiently remove inhibitors from samples, yielding high purity DNA.

• Compatible with a wide range of soil and stool sample types.

Sample Requirements

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

Kit Contents

Component	EC801-11 (50 rxns)
Lysis Buffer 56 (LB56)	40 ml
Lysis Enhancer 56 (LE56)	2.5 ml
Reagent DF56	400 µl
Precipitation Buffer 56 (PB56)	12 ml
Humic Acid Removal 56 (HAR56)	10 ml
Binding Buffer 56 (BB56)	30 ml
Clean Buffer 56 (CB56)	40 ml
Wash Buffer 56 (WB56)	20 ml
Elution Buffer (EB)	10 ml
Lysis Tube	50 each
Magnetic Soil and Stool Beads II	900 µl

Preparation before experiment

• Add 100% ethanol to CB56 and WB56 (specific volumes are listed in the table below).

Component	Volume
Clean Buffer 56 (CB56)	10 ml 100% ethanol
Wash Buffer 56 (WB56)	80 ml 100% ethanol

• Self-provided: 1.5 ml centrifuge tubes

Protocol

(1) Transfer 0.25-0.5 g of soil sample or 0.1 g of stool sample into a Lysis Tube. Add 700 µl LB56, 40 µl LE56 and 4 µl Reagent DF56. Tighten the lid and grind sample.

* A premix of LB56, LE56 and Reagent DF56 can be prepared in the specified ratio based on the sample amount. Prepare the premix fresh before use.

* For samples with low water content, adjust the sample amount as needed. Optionally, use a 70°C water bath for 5-10 minutes to enhance buffer penetration.

* For liquid samples, 200-400 µl of soil sample or 100-200 µl of stool sample is recommended.
* Choose one method to grind the sample.
  a. Vortex mixer: Place the Lysis Tube on the vortex mixer, press the lid firmly to ensure complete mixing of grinding beads, and vortex at maximum speed for 10 minutes.
  b. Grinder: Place the Lysis Tube on grinder and select the appropriate program for lysis.
  For the FastPrep-24 Instrument (MP company), the recommended program is 6.0 m/s, on 60 sec, 2 cycles.
  For other high-throughput grinders, the recommended program is 45HZ, 3-5 minutes.

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

(3) Add 200 µl PB56 and 150 µl HAR56, vortex to mix, and centrifuge at 12,000×g for 3 minutes.

(4) Transfer 500-600 µl of supernatant into a new 1.5 ml sterile centrifuge tube (self-provided). Add 500 µl BB56 and mix well.
* Avoid pipetting any white floccules or precipitate at the bottom when transferring supernatant.

(5) Transfer 15 µl of magnetic beads (vortex thoroughly before use) into the centrifuge tube, vortex for 5 minutes, and place the centrifuge 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 CB56, vortex for 2 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 WB56, vortex for 1 minute, 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 the extracted nucleic acid, please avoid repeated freeze-thaw cycles of the sample.
• It is recommended to homogenize samples before weighing and extracting.
• 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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