

Magnetic DNA Purification Kit

Cat. No.: M1521715 | Pack size: 48T | Storage: 2-8°C; room temperature

Overview

This kit is designed for the recovery of high-purity DNA from 200 µL of PCR products, elution products, or enzymatic reaction products. The method employs superparamagnetic particle purification technology. The extraction process eliminates the need for toxic phenol-chloroform extraction. The procedure is simple and convenient, and the resulting DNA product can be used directly in downstream applications such as PCR, quantitative real-time PCR, microarray analysis, and first- and second-generation sequencing. The processed products are intended for scientific research and testing purposes only.

Kit Contents & Storage

Cat. No.	Component	48T	Storage
M1521715A	Binding Buffer CP	33 mL	RT.
M1521715B	Magnetic Beads MXVB	1.1 mL	2-8°C
M1521715C	Wash Buffer DW2	40 mL	RT.
M1521715D	Elution Buffer DE	10 mL	RT.

Each component has a shelf life of 12 months under corresponding storage conditions.

Storage Conditions

M1521715A, M1521715C, M1521715D: Store at room temperature, stable for 12 months.

M1521715B: Store at 2–8°C, stable for 12 months.

Compatible Instruments

Manual extraction.

Precautions

Read this manual carefully before use.

Several buffers in this kit contain irritating guanidinium salts. Always wear gloves and handle according to standard safety precautions. Avoid contact of buffers with skin, eyes, and mucous membranes. In case of contact, flush immediately with plenty of water and seek medical attention.

If precipitation occurs in the solution due to low ambient temperatures, incubate at 30°C in a water bath until the precipitate is completely dissolved before use.

If the magnetic beads cannot be resuspended after vigorous shaking due to low ambient temperatures, do not use the beads.

Several buffers in this kit contain guanidinium salts. Do not treat with oxidizing disinfectants such as sodium hypochlorite, as this may release toxic gases. Dispose of waste according to medical waste regulations.

This kit components are designed to be used together as a system. Components from different lot numbers should not be interchanged or mixed.

Instructions for Use

1. Sample Requirements

Applicable sample type: 200 µL PCR product, elution product, or enzymatic reaction product.

Sample storage and transport: Samples may be processed immediately or stored at -70°C or lower for up to 6 months. Avoid repeated freeze-thaw cycles. Transport samples using cold chain logistics.

Freeze-thaw requirements: Rapid freezing and rapid thawing are recommended; avoid repeated freeze-thaw cycles.

2. Equipment and Materials to be Supplied by User

Constant temperature water bath (for use when precipitation occurs in solutions);

Magnetic separation rack (for 1.5/2.0 mL tubes);

1.5/2.0 mL sterile, nuclease-free centrifuge tubes;

Pipettes and tips of various volumes (20, 200, 1000 µL).

3. Reagent Preparation

Check solutions for any precipitation and confirm that the magnetic beads can be resuspended.

4. Operating Procedure

Recommendation for magnetic separation (starting from step 4.4): After placing the centrifuge tube on the magnetic rack, gently rotate it left and right. Once the magnetic beads have aggregated against the tube wall closest to the magnet, gently invert the entire rack several times to collect any

beads from the cap onto the tube wall. Allow to stand for several minutes until the solution becomes clear (standing time depends on the strength of the magnetic rack).

4.1 Transfer 200 μ L of sample to a 1.5 mL centrifuge tube. If the sample volume is less than 200 μ L, adjust the volume to 200 μ L with PBS or sterile, nuclease-free water.

4.2 Add 600 μ L of Binding Buffer CP and mix thoroughly by vortexing.

4.3 Add 20 μ L of Magnetic Beads MXVB and shake or vortex for 5–7 minutes to allow DNA binding to the beads.

4.4 Place the tube on the magnetic rack for magnetic separation until the solution is clear, then aspirate and discard the supernatant.

4.5 Add 700 μ L of Wash Buffer DW2. Remove the tube from the rack, vortex for 10 seconds to disperse the beads, then place back on the magnetic rack for separation until the solution is clear. Aspirate and discard the supernatant.

4.6 Perform a quick spin using a mini centrifuge, then place the tube back on the magnetic rack and allow beads to collect until the solution is clear. Carefully aspirate and discard all residual liquid. Open the tube cap and air-dry the beads for 3–5 minutes.

Note: Residual ethanol will inhibit downstream enzymatic reactions. Ensure ethanol has completely evaporated during drying. Do not over-dry the beads, as this may affect subsequent elution efficiency.

4.7 Add 20–100 μ L of Elution Buffer DE and vortex at high speed for 2–3 minutes to fully disperse the beads.

4.8 Incubate at 65°C for 6 minutes, then vortex at high speed for 30 seconds.

4.9 Briefly centrifuge to collect any droplets from the cap into the tube, then place on the magnetic rack for magnetic separation.

4.10 Transfer the DNA solution to a new centrifuge tube for subsequent use. If not used immediately, store at -15 to -25°C. For long-term storage, place at -70°C or lower.

Limitations of the Method

For certain poorly collected samples, trace impurities in the extracted product may inhibit PCR amplification.

The efficiency of nucleic acid extraction is closely related to the quality of sample collection, handling, transport, and storage. Any error in these processes may lead to inaccurate results.

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