RUO

| REF | G2MBR4-0633 | 50 Tests |
|---|---|---|
| | G2MBR4-0634 | 250 Tests |

MAGNXT

# DBS DNA Extraction Kit

## Intended Use

The MagNXT Dried Blood Spot DNA Extraction Kit is intended for the extraction of DNA from dried blood spot samples. The blood should be spotted and dried on suitable filter paper or specimen collection cards.

## Intended User

The MagNXT Dried Blood Spot DNA Extraction Kit is intended for use by molecular biologists or research laboratory professionals.

## Test Principle

The MagNXT Dried Blood Spot DNA Extraction Kit utilizes a proprietary combination of enzymes, buffers, and magnetic beads to extract DNA from dried blood spot samples. Purification is based on magnetic bead based separation. The unique formulation of the kit enables efficient lysis of blood cells, removal of inhibitors, and purification of high-quality DNA. Impurities are removed through washing steps, leaving only the DNA bound to the magnetic beads. The resulting DNA is suitable for downstream molecular applications, such as PCR, qPCR, and sequencing.

## Summary

The MagNXT Dried Blood Spot DNA Extraction Kit is a proprietary solution designed for the efficient extraction of high-quality DNA from dried blood spot samples. Purification requires no phenol/chloroform extraction or alcohol precipitation, involves minimal handling and simple centrifugation processing which completely removes contaminants and enzyme inhibitors, such as proteins and divalent cations.

## Storage, Operating Conditions and Stability

- The kit has a shelf life of 18 months from the date of manufac turing.
- The test kit and its components are stable until the expiration date mentioned on the kit box.
- All the kit components are shipped and stored at 15°C to 25°C.

* Store the MagPure Particles at 4°C.

## Reagents Provided

### Table 1a. (For 50 Tests)

| Kit Contents | Kit Content Code | Kit Content Quantity G2MBR4-0633 |
|---|---|---|
| MagPure Particles | G2MBR3-1890-1 | 1 X 1 ml |
| DBS Lysis Buffer | G2MBR3-1891-1 | 1 X 30 ml |
| Buffer DW1 | G2MBR3-1892-1 | 1 X 12 ml |
| Buffer DW2 | G2MBR3-1893-1 | 1 X 12 ml |
| Proteinase K | G2MBR3-1894-1 | 1 X 20 mg |
| Protease Dissolve Buffer | G2MBR3-1895-1 | 1 X 2 ml |
| Buffer AE | G2MBR3-1896-1 | 1 X 10 ml |

## Table 1b. (For 250 Tests)

| Kit Contents | Kit Content Code | Kit Content Quantity G2MBR4-0634 |
|---|---|---|
| MagPure Particles | G2MBR3-1890-2 | 1 X 5 ml |
| DBS Lysis Buffer | G2MBR3-1891-2 | 1 X 130 ml |
| Buffer DW1 | G2MBR3-1892-2 | 1 X 60 ml |
| Buffer DW2 | G2MBR3-1893-2 | 2 X 30 ml |
| Proteinase K | G2MBR3-1894-2 | 1 X 100 mg |
| Protease Dissolve Buffer | G2MBR3-1895-2 | 1 X 6 ml |
| Buffer AE | G2MBR3-1896-2 | 1 X 30 ml |

**Materials Required but Not Provided**

- Water bath or Heat block
- Micropipettes (Adjustable)
- Disposable barrier (Filter) pipette tips
- 1.5 ml microcentrifuge tubes (DNase/RNase Free)
- Table top microcentrifuge
- Molecular biology grade ethanol (96-100%)
- Personal protective equipment (Aprons, disposable gloves, goggles etc).
- 1X PBS

⚠ **Instructions Before Use**

- Switch on the water bath at 85°C & 56°C before starting of the experiment.
- Use preheated Buffer AE for efficient DNA yield.
- Use sterile 1.5 ml microcentrifuge tubes.
- Dilute Buffer DW1 & DW2 with an appropriate amount of molecular biology grade ethanol (96-100%), as shown on label and store at room temperature.
- Add Protease Dissolve Buffer to the Proteinase K, final concentration should be 20 mg/ml. For long term storage, the unused portion of the solution can be stored in aliquots at -20°C until needed.
- Always vortex the Proteinase K before use.
- Always vortex the MagPure Particles suspension before use.

**Protocol**

**A. DNA Purification from Dried blood spots**

1) Cut-out the section of filter paper which contains the dried blood sample and place it in a sterile 1.5 ml microcentrifuge tube.

2) Add 300 µl of 1X PBS and incubate for 5-10 min at room temperature.

3) Add 300 µl DBS Lysis Buffer and incubate it at 85°C for 20 min.

4) Following efficient lysis add 200 µl DBS Lysis Buffer with additional 20 µl Proteinase K and incubate it at 56°C for 20 min.

5) Centrifuge the tubes at 10,000x*g* for 2 min.

6) Transfer the supernatant into a new 1.5 ml microcentrifuge tube and add 20 µl of MagPure Particles and 0.5 ml of chilled molecular biology grade ethanol (96-100%) into the microcentrifuge tube containing mixture and vortex for 15 sec. Leave the microcentrifuge tubes at room temperature for 5 min, followed by manually creating a vortex by striking the tube forward and down with your finger and thumb.

7) Short spin the tubes and transfer into a magnetic stand, and wait for ~2 min to adsorb the MagPure Particles. Carefully aspirate and discard the cleared supernatant solution, without disturbing the magnetic bead pellet.

8) Add 500 µl Buffer DW1 to the beads and vortex for 10 sec. Transfer the microcentrifuge tubes into a magnetic stand and leave it undisturbed for ~2 min to separate the magnetic beads. Carefully aspirate and discard the cleared supernatant solution, without disturbing the magnetic bead pellet.

9) Add 500 µl Buffer DW2 and vortex for 10 sec. Transfer the microcentrifuge tubes to a magnetic stand and leave it undisturbed for 2 min to separate the magnetic beads. Completely remove and discard the cleared supernatant without disturbing magnetic bead pellet.

10) Repeat step 9 once.

11) Centrifuge briefly and transfer to magnetic stand. Aspirate all solutions and air dry for 5-10 min.

12) Add 50-100 µl Buffer AE and vortex to disperse the magnetic beads. Keep the microcentrifuge tubes at room temperature for 3-10 min, vortex several times in between, to elute the nucleic acid.

13) Transfer the microcentrifuge tubes into a magnetic stand and let the beads to separate for 3 min. Transfer the cleared solution containing DNA into a new 1.5 ml microcentrifuge tube.

14) The purified DNA sample can be stored at 4°C However, for long term storage, we recommend storing the extracted DNA at -20/-80°C

| Symbols for Use in the Labeling | |
|---|---|
| **Symbols** | **Definition** |
|  | KEEP AWAY FROM SUNLIGHT |
|  | TEMPERATURE LIMIT |
|  | RESEARCH USE ONLY |
|  | UPWARD |
|  | CONSULT INSTRUCTIONS FOR USE |
|  | BATCH CODE |
|  | CATALOGUE NUMBER |
|  | USE BY DATE |
|  | DATE OF MANUFACTURE |
|  | MANUFACTURER |
|  | CONTAINS SUFFICIENT FOR <n> TESTS |
|  | CAUTION |
|  | DO NOT USE IF PACKAGE IS DAMAGED |

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