

# MagaBio plus Blood Genomic DNA Purification Kit

## Product Introduction

This product is a highly efficient and high-purity DNA extraction solution specifically designed for whole blood samples. Through a unique and precisely designed reagent formula and process, it achieves rapid and effective purification of genomic DNA from blood samples.

In the core extraction process of this product, a combination of efficient lysis buffer and proteinase K is first used, which can rapidly and thoroughly release DNA from proteins and other cellular components in blood samples, significantly improving the efficiency of blood sample lysis. Specially added unique whole blood releasing agent optimizes the conditions for DNA release in whole blood environment, ensuring high concentration and high quality DNA.

The next key step involves the use of magnetic bead technology specifically binding to DNA, where the released DNA is accurately adsorbed onto the magnetic beads. Utilizing magnetic materials for capture allows the DNA-bound magnetic beads to be easily separated from the solution, greatly simplifying and accelerating the separation process.

Subsequently, a precise washing procedure is designed to effectively remove impurities and contaminants without damaging the DNA, further enhancing DNA purity.

Finally, by using carefully prepared elution buffer, DNA can be gently eluted from the magnetic beads completely, obtaining high-quality DNA products suitable for subsequent experimental procedures and long-term storage.

## Specification

| Parameters          | Description                                                                                                                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sample type         | Whole blood                                                                                                                                                                                                       |
| Sample volume       | 200 $\mu$ L                                                                                                                                                                                                       |
| Extraction time     | 42 minutes                                                                                                                                                                                                        |
| Compatible machines | Bioer Nucleic Acid Purification System GenePure Pro 96, GenePure Pro, Automated Nucleic Acid Purification and Real Time PCR System AutoGene 9600, AutoGene 1600                                                   |
| Storage conditions  | After the automated program ends, the eluate in the reagent plate is purified nucleic acid. If not used immediately, transfer the eluate to new 1.5 mL nuclease-free centrifuge tubes and store at -20°C or below |
| Product performance | 2°C-25°C for 12 months                                                                                                                                                                                            |
| Product yield       | 60 ng/ $\mu$ L                                                                                                                                                                                                    |

## Features



• **Wide Applicability:** The nucleic acid extraction kit is suitable for various types and sources of whole blood samples, whether human blood or blood from other animals, stored blood, or fresh blood. It can effectively separate and purify high-quality genomic DNA, meeting the needs of different research fields.

• **Short Extraction Time:** The whole blood genomic DNA extraction kit is designed with an optimized process, capable of completing the nucleic acid extraction process in just 44 minutes. Compared to traditional methods such as centrifugation and phenol-chloroform, this significantly reduces experimental operation time.

• **High-Quality Nucleic Acid Extraction:** This type of kit utilizes highly efficient nanoscale superparamagnetic microspheres and specific binding solutions to ensure high purity and integrity of genomic DNA extracted from whole blood samples. It is free from protein and other impurity contamination, suitable for various downstream molecular biology applications such as PCR amplification, fluorescence quantitative PCR, gene sequencing, and chip analysis.

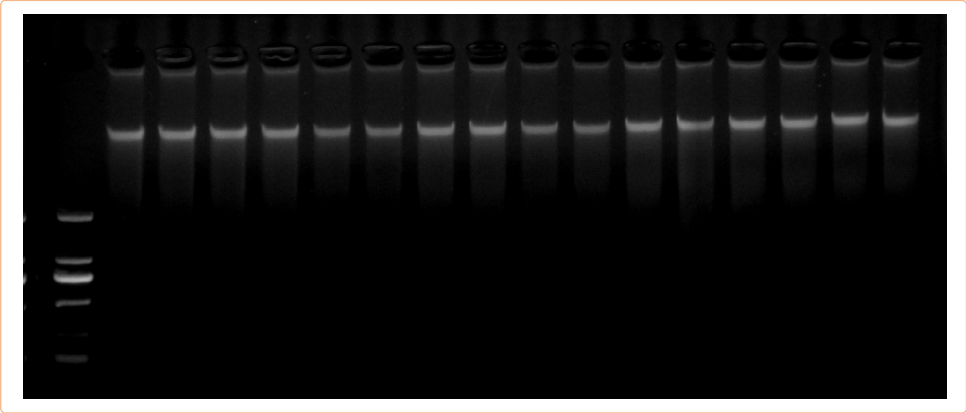
• **Strong Compatibility and Risk-Free Downstream Testing:** Due to effective removal of inhibitors during the extraction process while maintaining the integrity and stability of DNA, the extracted DNA can be directly applied to various sensitive downstream experiments, such as real-time PCR detection or NGS (next-generation sequencing technology), without causing interference or affecting experimental results. Additionally, this kit does not require any pretreatment during whole blood extraction, greatly ensuring the safety of laboratory personnel.

## Application Cases

### Case 1 Sample Compatibility

Add 200  $\mu\text{L}$  of whole blood sample into the lysis buffer reagent well and conduct the following extraction experiment:

Agarose gel electrophoresis results are as follows (the extracted product was diluted 6-fold with pure water for the following experiment):



| NO. | Sample                               | Concentration (ng/ $\mu\text{L}$ ) | OD <sub>260</sub> /OD <sub>280</sub> | OD <sub>260</sub> /OD <sub>230</sub> | Qubit detection result (ng/ $\mu\text{L}$ ) |
|-----|--------------------------------------|------------------------------------|--------------------------------------|--------------------------------------|---------------------------------------------|
| 1   | Fresh Blood - Mixed Blood            | 200.772                            | 1.904                                | 1.825                                | 116.00                                      |
|     |                                      | 201.92                             | 1.881                                | 1.725                                | 110.00                                      |
| 2   | Fresh Blood-Individual Blood 1       | 203.107                            | 1.884                                | 1.827                                | 100.00                                      |
|     |                                      | 201.746                            | 1.898                                | 1.841                                | 108.00                                      |
| 3   | Fresh Blood-Individual Blood 2       | 121.279                            | 1.911                                | 1.916                                | 74.80                                       |
|     |                                      | 120.123                            | 1.913                                | 1.915                                | 69.20                                       |
| 4   | Fresh Blood-Individual Blood 3       | 196.458                            | 1.912                                | 1.951                                | 104.00                                      |
|     |                                      | 196.519                            | 1.918                                | 1.945                                | 116.00                                      |
| 5   | Stored Blood - Frozen Blood          | 127.937                            | 1.885                                | 1.867                                | 83.00                                       |
|     |                                      | 126.586                            | 1.897                                | 1.936                                | 78.60                                       |
| 6   | Stored Blood                         | 161.354                            | 1.861                                | 2.012                                | 106.00                                      |
|     |                                      | 155.873                            | 1.856                                | 2.019                                | 112.00                                      |
| 7   | Stored Blood - Viscous Appearance    | 136.114                            | 1.845                                | 2.012                                | 110.00                                      |
|     |                                      | 144.963                            | 1.849                                | 2.002                                | 108.00                                      |
| 8   | Fresh Blood - Pregnant Women's Blood | 158.037                            | 1.881                                | 1.954                                | 104.00                                      |
|     |                                      | 148.903                            | 1.894                                | 1.908                                | 91.40                                       |

**Conclusion:** The experiment demonstrates that the whole blood genomic DNA extraction kit exhibits excellent performance and stability. By strictly following the operational procedures provided by the kit, we can efficiently complete the genomic DNA extraction process from whole blood samples within the designated 44 minutes. Preliminary test results indicate that the extracted DNA possesses high-quality characteristics: the electrophoresis pattern is clear without evident signs of degradation, demonstrating good DNA integrity; the 260/280nm absorbance ratio is close to 1.9, meeting the standard for high-quality DNA and reflecting high nucleic acid purity with no protein or organic contamination.

Case 2 Comparison with Competitor

Conduct a comparative test by simultaneously adding 200 µL of whole blood sample for extraction.

| NO. | Sample     | Concentration (ng/µL) | OD <sub>260</sub> /OD <sub>280</sub> | OD <sub>260</sub> /OD <sub>230</sub> | Qubit detection result (ng/µL) |
|-----|------------|-----------------------|--------------------------------------|--------------------------------------|--------------------------------|
| 1   | BSC08      | 135.716               | 1.920                                | 1.920                                | 81.0                           |
|     |            | 137.405               | 1.883                                | 1.883                                | 79.0                           |
| 2   | Competitor | 117.705               | 0.851                                | 0.851                                | 58.0                           |
|     |            | 126.961               | 1.405                                | 1.405                                | 64.0                           |

**Results Analysis:** Extraction Efficiency: This reagent kit can efficiently extract genomic DNA from whole blood samples within 44 minutes, compared to similar competing products which require a shorter extraction time, significantly improving experimental efficiency. DNA Purity: The purity of the extracted DNA samples was determined by UV spectrophotometry using the A260/A280 ratio. The results indicate that our reagent kit extracts DNA with higher purity, typically close to the ideal ratio of 1.9, while the competing products tend to have higher ratios. This directly impacts the accuracy and reliability of downstream molecular biology experiments.

Ordering Information

| Product Name                                    | Cat. No.   | Package | Storage Condition |
|-------------------------------------------------|------------|---------|-------------------|
| MagaBio plus Blood Genomic DNA Purification Kit | BSC08T1C   | 16T     | 2°C-30°C          |
|                                                 | BSC08S1C   | 32T     |                   |
|                                                 | BSC08S1S   | 32T     |                   |
|                                                 | BSC08T1E   | 16T     |                   |
|                                                 | BSC08N1E   | 24T     |                   |
|                                                 | BSC08S1E   | 32T     |                   |
|                                                 | BSC08M1E   | 48T     |                   |
|                                                 | BSC08L1E   | 96T     |                   |
|                                                 | BSC08S1S   | 32T     |                   |
|                                                 | BSC08M1S   | 48T     |                   |
|                                                 | BSC08S1B   | 50T     |                   |
|                                                 | BSC08M1B   | 100T    |                   |
|                                                 | BSC08T1C-C | 16T     |                   |
|                                                 | BSC08S1C-C | 32T     |                   |
|                                                 | BSC08T1P   | 16T     |                   |
|                                                 | BSC08S1P   | 32T     |                   |