

Product Name

Bac&Fun Nucleic Acid Extraction Kit (Magnetic Beads Method)

Packing Specifications

100 Reactions

Intended Use

This kit is used for the extraction, enrichment and purification of bacterial and fungal nucleic acids. The purified product is used for PCR detection.

Scope of Application

This product is suitable for the extraction or purification of bacterial and fungal nucleic acids from biological products such as cell cultures (e.g., master cell banks), vaccines and cell therapy products. It is applicable to high-concentration cell samples ($\leq 10^6$ cells) and complex samples with high protein content.

Compatible Equipment

Dry bath incubator, magnetic stand, vortex mixer, reaction vessels, centrifuge, etc.

Components

Components	100 Reactions
Bac&Fun sample buffer	10 mL × 1 bottle
Lysis	60 mL × 1 bottle
Washing solution	100 mL × 1 bottle
Eluate	10 mL × 1 bottle
Proteinase K	1 mL × 1 tube
Magnetic bead	1 mL × 1 tube
Instruction	1 copy

Note: Components from different kit batches are not interchangeable. The volume indicated on each component is the minimum dispensed volume.

Storage Conditions and Shelf Life

1. The kit shall be stored at 10-30°C with a shelf life of 24 months.
2. The kit should not be frozen and must be protected from strong light exposure.
3. Product batch number and expiration date: Refer to the product outer packaging.

Compatible Instruments

The kit is compatible with the Biori automated nucleic acid extraction system and other automated nucleic acid extraction devices that have been validated to meet reagent extraction requirements.

Sample Processing

1. Pre-experimental preparation:

1.1 Properly disinfect the testing area and surrounding environment to remove residual nucleic acids. Wipe all areas around the laminar flow hood thoroughly with nucleic acid decontaminant and 75% ethanol.

1.2 Wipe the outer surfaces or packages of pipettes, pipette tips, centrifuge tubes with nucleic acid decontaminant and 75% ethanol. Place them in the laminar flow hood and perform UV sterilization for at least 30 minutes.

2. Reagent preparation:

Open the kit and take out all components. If crystallization occurs, incubate at room temperature or 37 °C until fully dissolved, then mix well. Wipe the outer surfaces with nucleic acid decontaminant and 75% ethanol, then place all components in the laminar flow hood for later use.

3. Sample Handling:

Equilibrate samples to room temperature, vortex to homogeneity, then perform brief low-speed centrifugation to collect liquid at the tube bottom. Wipe the outer surface of the centrifuge tube with nucleic acid decontaminant and 75% ethanol, then place the tube in the laminar flow hood.

Transfer 200 μ L sample into a new 1.5 mL sterile nuclease-free centrifuge tube, add 100 μ L Bac&Fun Sample Buffer at the same time. Cap tightly and seal with sealing film. Vortex for 15 seconds to mix well. Briefly centrifuge at low speed to collect liquid at the tube bottom, then heat at 95 °C for 10 minutes in a dry bath incubator. Carefully take out the tube, vortex for 1 minute, briefly centrifuge at low speed to collect liquid at the tube bottom, then proceed to the subsequent extraction and purification steps.

Note: After sample processing, perform nucleic acid extraction or purification as soon as possible.

Protocol

Before use, briefly centrifuge to bring all reagents to the tube bottom.

A. Manual operation process:

- To the processed sample tube, add sequentially: 600 μ L Lysis Buffer, 10 μ L Magnetic Beads (mix well before aspiration), 10 μ L Proteinase K, and internal control (if applicable; follow the amplification kit insert). Vortex vigorously to mix well. Incubate at 37 °C for 2 minutes, then centrifuge briefly at low speed for 2 seconds to collect liquid from the wall and cap to the tube bottom.
- Magnetically separate the mixture for 2 minutes. Discard the supernatant, then remove the tube from the magnetic stand;
- Add 1 mL Washing Solution, vortex thoroughly to mix, centrifuge briefly at low speed for 2 seconds, then magnetically separate for 2 minutes. Discard the supernatant, then remove the tube from the magnetic stand.
- Add 100 μ L Elution Buffer, vortex vigorously to mix, centrifuge briefly at low speed for 2 seconds, then incubate at 80 °C for 5 minutes in a dry bath incubator.
- Magnetically separate for 1 minute. Collect the extracted or purified product for subsequent experiments.

※Magnetic separation time depends on the magnetic strength of the magnetic stand. If bead residue is observed, extend magnetic separation time appropriately. Discard the supernatant completely.

※Recommended low-speed centrifugation: \leq 3000 rpm, only to collect liquid from the tube wall/cap to the bottom. High-speed centrifugation is strictly prohibited during the entire experiment..

B. Automated Extraction Procedure (Example: BTE- 32PH 32- Channel Automated Nucleic Acid Extractor):

- Prepare 96-well deep-well plates and magnetic rod covers compatible with the extractor.;
- Reagent Dispensing: Dispense reagents into corresponding wells of the 96-well deep-well plate according to steps 3–7 below;

Note: Heating module positions may vary among instruments. Adjust reagent positions accordingly.

- To wells in columns A2–H2 and A8–H8 of the 96-well deep-well plate, add per well: 600 μ L Lysis Buffer, 10 μ L Magnetic Beads, 10 μ L Proteinase K, internal control (if applicable; follow the amplification kit insert), and 100–400 μ L liquid sample.
- To wells in columns A4–H4 and A10–H10, add 1000 μ L Washing Solution per well.;
- To wells in columns A6–H6 and A12–H12, add 100 μ L Elution Buffer per well.
- Place the loaded 96-well deep-well plate into the compatible automated nucleic acid extractor.
- Take out the magnetic rod covers and insert them into the correct positions of the extractor;
- Set up the extraction program and run it as follows:

Step	Item	Well	Volume	Mixing Speed	Mixing Time	Holding Time	Magnetic Separation Cycles	Drying Time	Lysis temp.	Elution temp.
1	Lysis	2	1000 μ L	fast	180s	0s	5	0s	40°C	0°C
2	Wash	4	1000 μ L	Medium	60s	0s	3	0s	0°C	80°C
3	Elute	6	100 μ L	fast	180s	0s	3	0s	0°C	80°C
4	Discard beads	4	1000 μ L	fast	10s	0s	0	0s	0°C	0°C

The Magnetic separation time depends on the magnetic strength of the magnetic rod. If bead residue is observed, extend magnetic separation time appropriately.

After completion of the automated program, transfer the eluted product from columns 6 and 12 to 1.5 mL sterile nuclease-free centrifuge tubes. Store the extracted product at -20 °C; if used immediately for detection, store at 2–8 °C..

Limitations of the Method

Sample volume: The maximum extraction sample volume shall not exceed 400 μ L.

Performance Characteristics

High efficiency and speed: The entire on-board extraction process takes only about 10 minutes.

Notes

1. Read this instruction carefully before operation. Perform the test strictly in accordance with the instruction.
2. Testing of sterile samples must be carried out in a sterile environment. Follow aseptic techniques throughout the test to prevent microbial contamination.
3. Avoid testing in harsh environments (e.g., high concentrations of corrosive gases such as 84 disinfectant, sodium hypochlorite, acids, alkalis, acetaldehyde, or dusty environments). Laboratory disinfection should be performed after the experiment.
4. The extracted product is nucleic acid. All utensils and pipettes must be dedicated. Disposable consumables such as centrifuge tubes and pipette tips must be sterile and DNase/RNase-free. Do not mix pipette tips between different samples to avoid cross-contamination.
5. Avoid contact with samples during the experiment. Change gloves promptly after handling samples.
6. This kit contains chemical reagents and preservatives with certain chemical hazards; avoid contact with skin or mucous membranes. If contact occurs, immediately rinse the affected area thoroughly with plenty of water. All samples and used reagents should be regarded as potentially infectious materials. Dispose of waste in compliance with local governmental and national regulations. Sample handling must be performed in a laminar flow hood.
7. Use all kit components before the expiration date marked on the outer package. Promptly reseal remaining reagents to avoid microbial nucleic acid contamination from repeated opening, and store at the specified temperature.
8. If crystallization occurs in reagents before use, warm appropriately until crystals are completely dissolved before use.
9. For any questions regarding the use of this kit, please contact our sales or technical support team.

Disclaimer

In all cases, the company's liability for this product is limited to the product value only.

Corporate information

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