Tiosbio® 5× Lightning Nucleic Acid Release Reagent (Universal Type)

Cat. No. BT0066

Characteristics

1. This kit can be used for nucleic acid (both DNA and RNA) extraction, enrichment, and purification from samples including whole blood, serum, plasma, urine, saliva, oral swabs, nasopharyngeal swabs, and cell suspensions. The processed material can be directly used for PCR amplification with Tiosbio® Marathon DNA Polymerase (BT0016), and for isothermal amplification with Tiosbio® RAA Nucleic Acid Amplification Kit (JY0200), Tiosbio® RT RAA Nucleic Acid Amplification Kit (JY0203), and Tiosbio® RAA Nucleic Acid Amplification Kit (Lateral Flow Strip Method) (JY0202).

2. No addition of enzymatic preparations such as lysozyme, lysostaphin, or proteinase K is required. No use of harmful chemical reagents such as phenol or chloroform is needed.

3. One-step, single-tube operation that is convenient and fast, with an operation time of only 10 minutes.

4. High sensitivity and good reproducibility. After processing with this kit, taking 1 µL of lysate supernatant as template for PCR can stably amplify target genes with an input of 10^1 copies.

5. Can be used for sample pretreatment in food safety, disease control, emerging infectious diseases, animal epidemics, molecular diagnostics, and genetic testing for precision medicine.

Storage Conditions and Shelf Life: 24 months

Specifications and Storage: 500 µL per tube, store at -20°C

Procedure

After processing samples such as whole blood, serum, plasma, urine, saliva, oral swabs, nasopharyngeal swabs, and cell suspensions, mix and process with Tiosbio® 5× Lightning Nucleic Acid Release Reagent (BT0066) at a ratio of 4:1.

Recommended system and usage method:

For every 20 µL of sample, add 5 µL of 5× Lightning Nucleic Acid Release Reagent (BT0066) to a new 200 µL Eppendorf tube. After vortex mixing thoroughly, place the Eppendorf tube on a metal bath or thermal cycler and heat at 95° C for 10 minutes. Remove the Eppendorf tube and equilibrate to room temperature, centrifuge at 12,000 rpm for 2 minutes, then aspirate the supernatant from the Eppendorf tube into a clean centrifuge tube for testing. For PCR, RAA, or RT RAA amplification, add 1 µL of processed supernatant per 25 µL reaction system.

Warnings and Precautions

1. When using this kit for nucleic acid extraction from whole blood, serum, plasma, urine, saliva, oral swabs, nasopharyngeal swabs, or cell suspensions, sample processing should be completed immediately after sample collection whenever possible. If conditions do not allow, samples should be transported under refrigerated or frozen conditions.

2. When used for infectious disease sample testing, pay attention to safety protection during operation. Operations should be conducted in designated laboratory facilities. Wear protective clothing, disposable gloves, and masks. All items that have directly contacted pathogen samples should be disinfected before disposal or reuse.

3. This kit is designed for rapid crude processing of animal liquid samples. The processed material can be used for PCR amplification with Tiosbio® Marathon DNA Polymerase (BT0016), and for isothermal amplification with Tiosbio® RAA Nucleic Acid Amplification Kit (JY0200), Tiosbio® RT RAA Nucleic Acid Amplification Kit (JY0203), and Tiosbio® RAA Nucleic Acid Amplification Kit (Lateral Flow Strip Method) (JY0202). The processed material is not suitable for experiments requiring high nucleic acid purity, such as UV spectrophotometric quantification.

4. When using the 5× Lightning Nucleic Acid Release Reagent, the ratio of sample to reagent should be 4:1. This ratio has been repeatedly optimized. Do not adjust arbitrarily!

5. For PCR, RAA, or RT RAA amplification, only 1 µL of processed supernatant is needed per 25 µL reaction system! Do not arbitrarily increase or decrease the amount of processed supernatant added. When the amplification template is DNA, the stored processed supernatant at -20°C can be reused multiple times within 48 hours.

6. The success of PCR or RAA reactions is closely related to primer design, cycling parameters, and amplification time settings. If amplification fails after processing samples with this kit, please confirm whether PCR or RAA reactions were successful using nucleic acid extracted by other methods.

7. This reagent is for research use only. Do not use for clinical, food, or other purposes.