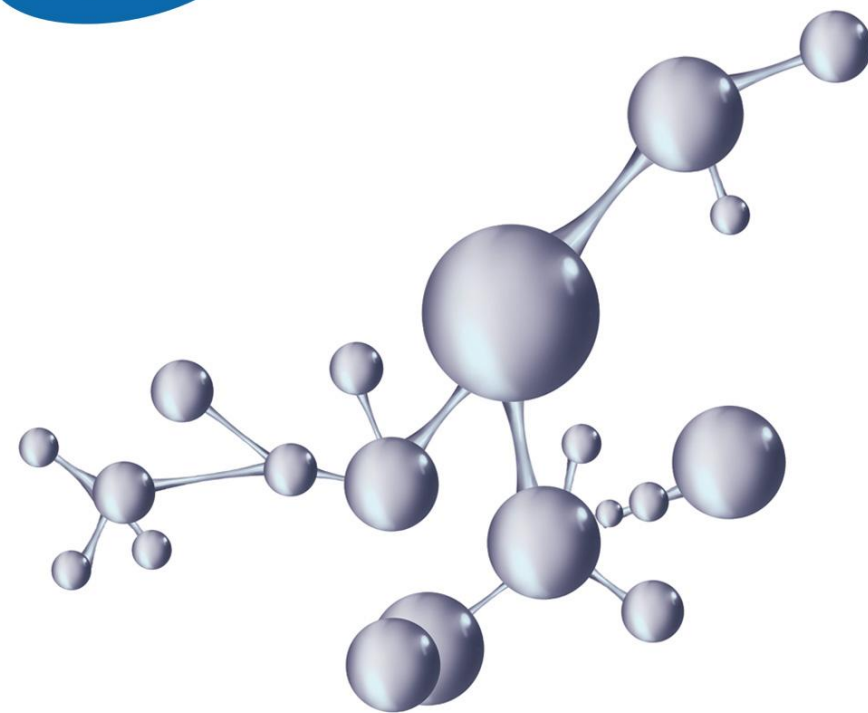




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HRK Express Extract DNA Kit

Instructions for Use

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HRK Express Extract DNA Kit

【Catalog Number】

HRK-D2401-1 (50 rxns)

HRK-D2401-2 (250 rxns)

【Product Components】

Components	50 rxns	250 rxns
HRK Lysis Buffer A	4.5 mL	22.5 mL
HRK Lysis Buffer B	0.5 mL	2.5 mL

【Product Description】

This DNA rapid extraction kit is suitable for DNA extraction from various tissue types. It can be used to rapidly release genomic DNA from human blood (EDTA anticoagulated blood, blood cards), oral swabs, hair follicles, fish meat, mouse tails, ears, toes, and other tissues. The extracted product can be directly used for PCR amplification without the need for homogenization, disruption, overnight digestion, phenol-chloroform extraction, DNA precipitation, or column purification, significantly reducing experimental time. For PCR reactions, only primers and templates need to be added to initiate amplification, minimizing steps such as tube opening/pipetting, reducing the risk of sample cross-contamination, and improving detection throughput and result reproducibility.

【Product Application】

1. Formalin-Fixed Paraffin-Embedded (FFPE);
2. Human blood (fresh whole blood, EDTA-anticoagulated blood, blood cards);
3. Oral swab;
4. Human hair (with follicle);
5. Mouse ear, tail tip, toe;
6. Fins or fish;
7. Homogenized insects;
8. Feather fragments.

【Store and Stability】

1. HRK Lysis Buffer A should be stored at $-20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ and transported at $\leq 0^{\circ}\text{C}$.
2. HRK Lysis Buffer B should be stored at $2-8^{\circ}\text{C}$ and transported at $\leq 0^{\circ}\text{C}$.
3. The kit has a shelf life of 18 months under proper storage conditions.

【Product Features】

1. **Ultra-Simple Operation** : Direct PCR amplification and identification using cleavage products as templates.
2. **Super time-saving** : The powerful lysis solution can rapidly release genomic DNA in 15 minutes.
3. **Wide range of applications** : Suitable for direct amplification of various sample types (such as blood, oral swabs, hair follicles, fish meat, mouse tails, ears, toes, etc.).

【Experimental procedure】

Recommended usage and cleavage time for tissues:

Sample Type	Sample Size	Decomposition Temperature and Time
Human blood	2 μL	70°C , 10 min
Blood Card	1-2 mm^2	70°C , 15 min
Hair (with follicles)	At least 2 pieces	70°C , 15 min
Oral swab	one	70°C , 15 min
Mouse tail	1-3 mm	70°C , 15 min
Mouse ear	2-5 mm^2	70°C , 15 min
Fin	2-5 mm^2	70°C , 15 min
Fish meat	1-3 mm^3	70°C , 15 min

1. Prepare an appropriate amount of $1 \times$ lysis buffer according to the number of samples to be lysed. The preparation method of lysis buffer required for a single sample is as follows:

	Components	Volume
1 $\times$ Lysis Buffer (Single Sample)	HRK Lysis Buffer A	90 μL
	HRK Lysis Buffer B	10 μL

▲ Freshly prepared $1 \times$ lysis buffer should be used; after adding all components, vortex the mixture thoroughly before use.

2. Take 100 μL of $1 \times$ lysis buffer and add it to the tissue to be lysed. After vortexing, incubate the mixture in a 70°C water bath for 15 minutes. For standard-sized target fragments, a 15 minute incubation is sufficient to release an adequate amount of DNA template. The incubation time can also be adjusted according to specific requirements:

Amplified fragment length	Recommended incubation time at 70°C
About 500 bp	10 min
About 1000 bp	20 min
About 1500 bp	30 min

▲ To ensure efficient DNA release, please make sure the tissue is completely immersed in the lysis solution. It is normal if the tissue block is not fully digested after incubation, and this will not affect its use.

3. After the incubation is complete, place the sample in a 95°C water bath or boiling water bath and heat for 5 minutes.
4. After vortexing the cleavage product thoroughly to ensure complete mixing, centrifuge at 12,000 rpm ($13,400 \times g$) for 3 minutes, and the supernatant can be taken for the PCR reaction. Alternatively, the supernatant can be transferred to another sterilized EP tube and stored at -20°C for at least three months.

【Precautions】

1. Pre-clean all tools used in the tissue separation process with 70% ethanol (self-provided).
2. The tissue should be minced as finely as possible to facilitate a smoother lysis reaction.
3. It is recommended to use freshly collected animal tissues. For tissues that have been frozen for a long time, repeated freeze-thaw cycles should be avoided as much as possible, as they may lead to template degradation and affect PCR efficiency.
4. The step at 95°C for 5 minutes must be performed, otherwise it will inhibit the subsequent PCR reaction.
5. The preparation of the PCR reaction system should be carried out in an ice-water bath to enhance amplification specificity.
6. For your safety and health, please wear a lab coat, mask, goggles, disposable gloves, and other protective measures when performing experiments.

7. This product is for research use only!

【Troubleshooting】

Question	Answer
Low amplification yield or failure to amplify	1. Some PCR inhibitors in the organization may mix into the lysis buffer: you can try diluting the lysate 10-fold before proceeding with PCR amplification. 2. The DNA release efficiency is relatively poor: consider extending the incubation time at 70°C. 3. 95°C, 5 min. This step: cannot be omitted and can be carried out in a boiling water bath. 4. Insufficient PCR cycles: Generally, 30-35 cycles are sufficient to amplify an adequate amount of product. However, for certain fragments, increasing the number of cycles may yield better amplification results. 5. PCR primer error: Set up a positive control reaction using purified genomic DNA as a template.
Amplification was observed in the negative control	Contamination in the PCR reaction system: Replace each component of the tissue lysis system and PCR amplification system one by one.