

Hieff™ Gel Extraction Kit

Product description

The Hieff™ Gel Extraction Kit adopts Hieff™ DNA Column G1 and efficient sol system, which is suitable for recovering high-quality DNA fragments with the length of 100 bp-40 kb from TAE or TBE agarose gel. In the recovery process, toxic organic substances such as phenol and chloroform do not need to be extracted, and time-consuming isopropanol or ethanol precipitation is not needed. The operation is simple, the sol time is short, the volume of added sol solution is small, and the whole purification process can be completed in 20 minutes. The Hieff™ DNA Column G1 in the kit can selectively adsorb up to 8 µg of DNA fragments, and does not adsorb enzymes, mineral oil and other impurities. The obtained DNA has high purity and can be directly used for subsequent experiments such as enzyme digestion, ligation, transformation, sequencing and library construction etc.

Specifications

Cat.No.	19101ES08 / 19101ES50 / 19101ES70
Size	5 T / 50 T / 200 T

Components

Components No.	Name	19101ES08	19101ES50	19101ES70
		5 T	50 T	200 T
19101-A	Hieff™ DNA Column G1	5	50	200
19101-B	2 mL Collection Tube G1	5	50	200
19101-C	AC Buffer G1	0.5 mL	5 mL	20 mL
19101-D	BD Buffer G1	2 mL	20 mL	80 mL
19101-E	Wash Buffer*	1.3 mL	13 mL	50 mL
19101-F	Elution Buffer	1 mL	10 mL	20 mL

Storage

Keep at room temperature away from light, valid for 2 years.

Notes

1. Sol BD contains irritating compounds, so wear latex gloves when operating to avoid contamination of skin, eyes and clothes. If it is contaminated with skin or eyes, wash it with plenty of water or normal saline. And attention should be paid to avoid direct light.
2. The recovered DNA fragments are generally between 70 bp and 40 kb, and the recovery efficiency of long and short fragments decreases rapidly.
3. The amount of recovered DNA is related to the amount of initial DNA, elution volume and DNA fragment size. Generally, the recovery rate of DNA fragments of 1-15 µg and 100 bp-5 kb can be as high as 85%.

4. When the glue is cut and recycled, the observation by ultraviolet lamp will damage DNA fragments, so we should use long-wave ultraviolet with low energy as much as possible and shorten the treatment time under ultraviolet as much as possible.
5. The eluent does not contain chelating agent EDTA, which does not affect the downstream digestion and ligation reactions. You can also use water for elution, but you should ensure that the pH is greater than 7.5, and too low pH will affect the elution efficiency. Eluting with water, DNA fragments should be stored at -20 °C. If DNA fragments need to be preserved for a long time, they can be eluted with TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8.0), but EDTA may affect the downstream digestion reaction, so it can be diluted appropriately when used.
6. Please operate with lab coats and disposable gloves, for your safety. This product is for research use only.

Instructions

Pre-experiment preparation

1. Self-provided equipment and reagents: desktop centrifuge, shaker, water bath pot or metal bath, anhydrous ethanol, centrifugal tube, etc.
2. Unless otherwise specified, all centrifugation steps are completed at room temperature, and a traditional desktop centrifuge with a rotating speed of 12,000 rpm is used.
3. Before the first use, 4 times the volume of anhydrous ethanol must be added to the Wash Buffer W*(19101-E) bottle, and it should be used after being fully mixed and marked. If it is found that the capacity of Wash Buffer W* is seriously inaccurate due to improper transportation or storage, please use a measuring cylinder to measure the volume and then add 4 times the volume of anhydrous ethanol. Close the bottle cap tightly after each use to keep the ethanol content in the Wash Buffer W*.

sample pretreatment

1. The agarose gel containing the target fragment was weighed.
2. Add 100 µL of BD Buffer G1(19101-D) to 100 mg of 1% agarose.

[Note]: For high concentration agarose gel, the amount of BD buffer G1 in solution should be increased in equal proportion.

3. Water bath at 56°C for 10 min. During the period, it is slightly inverted and mixed evenly every 2-3 min until the rubber block is completely melted.

[Note]: For fragments below 400 bp, it is suggested to add 0.3 times of isopropanol, which can significantly improve the recovery rate.

Purification of DNA products

1. Add 100 µL AC Buffer G1(19101-C) to DNA Column G1(19101-A), centrifuge at 12,000 rpm for 1 min, and discard the waste liquid.

[Note] : The treated DNA Column G1 can only be used on the same day.

2. Add the sample mixture into the DNA Column G1, leave it at room temperature for 1 min, centrifuge at 12,000 rpm for 1 min, and discard the waste liquid.

[Note] : 1) The maximum volume of the mixed solution is 750 µL at a time, and it can be centrifuged for many times.

2) After the filtered mixed solution is mixed with the residual strong alkaline AC buffer in the collection tube, the mixed solution may change from yellow to orange or even purple, which is the normal color change of phenol red pH indicator under alkaline conditions and does not affect the recovery efficiency.

3. Put the DNA Column G1 back into the Collection Tube G1(19101-B), add 600 μ L of Wash Buffer W*(19101-E), centrifuge at 12,000 rpm for 30 s, and discard the waste liquid.

【Note】 : Ensure that absolute ethanol has been added to the rinsing liquid W*.

4. Add 600 μ L Wash Buffer W*(19101-E), centrifuge at 12,000 rpm for 3 min, and discard the waste liquid.

5. Put the DNA Column G1 back into the Collection Tube G1, empty the column and centrifuge at room temperature for 2 min at 12,000 rpm to remove the residual Wash Buffer W*. Dry at room temperature for 2 min.

6. Put the DNA Column P3 into a new 1.5 mL centrifuge tube, add 50 μ L Elution Buffer(19101-F) to the center of the DNA Column G1, and leave it at room temperature for 2 min. Then centrifuge at 12,000 rpm for 1 min. Collecting filtrate, namely plasmid DNA solution.

【Note】 : The recovery yield can be improved by the following methods:

① preheating the eluent at 70°C; ② Put the DNA filtrate on the column again, leave it at room temperature for 2 min, and then elute.

7. Plasmid DNA solution can be stored at -20°C for a long time.