ROJETECHNOLOGIES

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GelJia Kit

Nucleic acid isolation from gel based on silica technology

- MiniPrep

By ROJE

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ROJETechnologies has been founded since 2014, and manufactures a wide range of molecular biology kits. We research, develop and create our products in order to make easier and more comfortable approaches to do research in molecular biology. Our target is offering high-quality affordable Molecular and diagnostic Kits and reagents, comparable of the world leaders, to research centers, laboratories, clinics, hospitals and diagnostic centers all over the world.

Contents

Kit Content

Component	50 preps	100 preps
RGB	30 ml	60 ml
GWB	10 ml	2 x 10 ml
RSB	5 ml	10 ml
HiPure DR column	50	100
Collection tube	50	100

Storage

Shipment condition is checked by ROJETechnologies. After arrival, all reagents should be kept dry, at room temperature. When storage condition is as directed, all reagents are stable until expiration date, as indicated on the kit box.

Intended Use

GelJia Kit provides the components and procedures necessary for purifying genomic DNA, PCR product from gel. Notice, GelJia Kit is intended for molecular biology applications not for diagnostic use. We recommend all users to study DNA experiments guideline, before starting their work.

Guarantee & Warranty

ROJETechnologies guarantees the efficiency of all manufactured kits and reagents. For more information on choosing proper kits based on your needs, please contact our technical support team. If any product does not satisfy you, due to reasons other than misuse, please contact our technical support team. If problem is due to manufacturing process, ROJE team will replace the Kit for you.

Notice to Purchaser

This product is only for experiments and not for commercial use in any kind. No right to resell this kit or any components. For information about our licensing or distributors contact ROJE business team.

Warning and Precautions

Due to chemical material usage that may be hazardous, always make sure to wear suitable lab coat, disposable gloves, and protective eyewear. Material Safety Data Sheet (MSDS) for all products and reagents are provided. They are accessible online at www.rojetechnologies.com.

Quality Control

GelJia Kit is tested against predetermined experiments on a lot-to-lot basis according to ROJETechnologies ISO-certified quality management system, to ensure consistent product quality. For your information, the results of all experiments are accessible by addressing REF and Lot number on web at www.rojetechnoloes.com.

Description

GelJia Kit provides a rapid, careful and convenient method for efficient nucleic acid isolation from agarose gel. The procedure is based on spin column technology which takes less than 30 minutes. Special buffers provided with the kit are enhanced for well-organized DNA recovery and contaminants removal. Due to presence of high concentration of salts, DNA adsorbs to the silica membrane and contaminants pass through the column. Finally, DNA is solved in prepared ROJE rehydration buffer. Typical yield, depends on density of the bands on gel. The isolated nucleic acid is ready to use in downstream applications such as restriction endonuclease digestions.

Equipment & Reagents to Be Supplied by User

- Absolute ethanol
- Pipets and pipet tips
- 1.5 ml Microcentrifuge tube
- Vortex
- Microcentrifuge
- Dry Heat Block / Water Bath

Applications

The isolated nucleic acid can be used in many downstream applications:

- Sequencing
- Restriction digestion
- Cloning

Features

Specific features of GelJia Kit are listed here in Table 1.

Table 1. GelJia Kit features and specifications

Features	Specifications
Elution volume	30-50 µl
Technology	Silica technology
Main sample type	DNA bands on agarose gel
Processing	Manual
Sample amount	Up to 200 mg agarose gel
Operation time per reaction	Less than 30 min
Typical yield	Up to 10 µg

DNA Yield and Concentration

To obtain higher yield of DNA, it is important to follow protocol carefully. rehydration buffer amount, how the buffer is applied to the spin column, and the incubation time of rehydration buffer on the HiPure DR Column effect on DNA yield.

Note: For less amount of rehydration buffer, it is recommended to add it exactly to the center of spin column.

Washing Buffer Preparation

Before the first use, add appropriate amount of ethanol (96-100%) to each washing buffer tube, then mix thoroughly to prepare buffers, refer to Table 2. Do not forget to tick the check box on the bottle label to indicate that ethanol has been added. Before each use mix reconstituted buffer by shaking. Storing at room temperature.

Table 2: buffer preparation

Buffer Name	Concentrated Volume	Amount of Ethanol	Final Volume
GWB	10 ml	40 ml	50 ml

Protocol 1: Isolation of nucleic acid from agarose gel (based on silica technology)

Sample type: DNA bands on agarose gel

Some tips to know:

- All centrifugation steps are carried out at room temperature (15–25°C).
- Not forget to add the appropriate amount of molecular biology grade ethanol (96–100%) to GWB as indicated on the bottle, before using for the first time (refer to buffer preparation section).
- RGB should be yellow, if it turns pink, set the pH to 5.0 by using H_2SO_4.
- If RGB forms precipitate, please warm it to 56°C until the precipitate has fully dissolved.

Process

1. Remove the DNA fragment from the 1% agarose gel with a clean, sharp scalpel.
   Note: removing the extra agarose, and try to minimize the size of the gel slice.
2. Weigh the gel slice in a colorless tube. Add appropriate RGB amount to the microcentrifuge tube (for each 100 mg of gel, add 300 µl RGB. For example, if the gel weight is 200 mg add 600 µl RGB to the microcentrifuge tube).
3. Pulse vortex for 5 s and incubate at 50°C for 10 min. During incubation, pulse vortex every 2 min.
4. After dissolving the gel completely, add one gel volume of absolute ethanol to the microcentrifuge tube (for example for 30 mg gel, add 30 µl absolute ethanol), pulse vortex for 15 s.
5. Transfer the solution to a HiPure DR Column placed in a 2ml collection tube (supplied in the kit box). Centrifuge for 1 min at 13000 rpm at room temperature. Discard the flow-through.
6. Add 750 µl prepared GWB to the spin column.
   Optional: For increased DNA concentration, after adding GWB incubate at room temperature (15-25°C) for 4 min.
7. Centrifuge for 1min at 13000 rpm at room temperature. Discard the flow-through, and then centrifuge the HiPure DR Column for an additional 1 min at 13000 rpm.

8. Place the HiPure DR Column in a new 1.5 ml microcentrifuge tube. Add 30-50 µl RSB directly to the center of spin column; incubate at room temperature (15-25˚C) for 5 min. Centrifuge for 1 min at 13000 rpm to elute the nucleic acid.

Troubleshooting

Here we try to cover as many problems as you may see in using this product, however scientists in ROJE technical support team are eager to answer all your questions. Do not hesitate to contact us for more information.

Symptoms	Problem	Suggestion
Low nucleic acid recovery	Incomplete solubilizing of gel slice	• It may be due to, large sample or inappropriate RGB amount. Repeat procedure, with smaller starting material and appropriate RGB amount.
	Too large gel slice	• The most recovery can be obtained from less than 200 mg gel. However, for size bigger than 200 mg, it is recommended to use multiple spin column.
	RGB turned yellow or orange	• RGB color should be yellow, however if color changes, set the pH at 5.00 by using H_2SO_4.
	GWB did not contain ethanol	• Please sure to add appropriate ethanol to GWB, before first use.
DNA does not perform well in downstream application	Ethanol carryover	• Ensure that the traces of ethanol before rehydration step is removed.
	Salt concentration in elution	• After adding 750 µl of GWB, incubate 5 min at room temperature, and then centrifuge it.

Appendix 1. Yield and Purity of DNA

The absorbance of DNA can be measured by any spectrophotometer. The ratio of absorbance at 260 nm and 280 nm is used to evaluate the purity of DNA. Pure DNA has an A260/A280 ratio of 1.8–1.9 and also a symmetric peak of absorbance at 260 nm. If the ratio is lower in either case, it may indicate the presence of contamination. Proteins have absorbance at 280 nm. EDTA, carbohydrate and phenol all have absorbance near 230 nm.

Appendix 2. Convert RPM to RCF (Centrifuge)

All centrifugation steps are performed at room temperature. The correct rpm can be calculated using the formula:

$$RPM = \sqrt{\frac{RCF}{(1.118 \times 10^{-5})(r)}}$$

Where **RCF** = required gravitational acceleration (relative centrifugal force in units of g); **r** = radius of the rotor in cm; and **RPM** = the number of revolutions per minute required to achieve the necessary g-force.

Ordering Information

Category	Product Name	Size	Cat NO
PCR & Gel Purification	GelJia Kit	50 Preps	PG983001
	GelJia Kit	100 Preps	PG983002
	PCR-Pure Kit	50 Preps	PG983003
	PCR-Pure Kit	100 Preps	PG983004
	Safe PCR-Pure Kit	50 Preps	PG983015
	Safe PCR-Pure Kit	100 Preps	PG983016
	Gel and PCR Purification Set	50 Preps	PG983011
	Gel and PCR Purification Set	100 Preps	PG983012

Technical Assistance

ROJETechnologies guarantees your complete satisfaction. ROJE technical support team composed of highly trained experienced scientists, who are able to troubleshoot most problems you face. Our technical support team can offer expert advice which may help you select suitable product.

Contact our technical support at any time by selecting one of these ways:

- Through our telephone and fax number available at ROJETechnologies website.
- You can submit your question directly to ROJE technical support team from our website (www.rojetechnologies.com).
- Or send your questions to this email address, technicalsupport@rojetechnologies.com .

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