ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

INSTRUCTION MANUAL

Zymoclean™ Gel DNA Recovery Kit

Catalog Nos. **D4001, D4002, D4007 & D4008**

Highlights

- Quick (15 minute) recovery of ultra-pure DNA from agarose gels.
- Column design permits DNA elution at high concentrations into minimal volumes (≥6 µl).
- Eluted DNA is well suited for use in DNA ligation, sequencing, labeling, PCR, *etc*.

Contents

ZYMO RESEARCH CORP.

Phone: (949) 679-1190 ▪ Toll Free: (888) 882-9682 ▪ Fax: (949) 266-9452 ▪ info@zymoresearch.com ▪ www.zymoresearch.com

Satisfaction of all Zymo Research products is guaranteed. If you should be dissatisfied with this product please call 1-888-882-9682.

Product Contents

Zymoclean™ Gel DNA Recovery Kit (Kit Size)	**D4001, D4007** (50 preps.)	**D4002, D4008** (200 preps.)	**Storage Temperature**
ADB	50 ml	2x100 ml	Room Temp.
DNA Wash Buffer[1]	6 ml	24 ml	Room Temp.
Zymo-Spin™ I Columns	50 ct. D4001 – w/ uncapped columns D4007 – w/ capped columns	200 ct. D4002 – w/ uncapped columns D4008 – w/ capped columns	Room Temp.
Collection Tubes	50	200	Room Temp.
Instruction Manual	1	1	-

Note **-** Integrity of kit components is guaranteed for up to one year from date of purchase. Reagents are routinely tested on a lot-to-lot basis to ensure they provide the highest performance and reliability.

[1] Ethanol must be added prior to use as indicated on **DNA Wash Buffer** label.

Specifications

- **DNA Purity** – High-quality, purified DNA is eluted with water making it especially well suited for sequencing and ligation reactions.
- **DNA Size Limits** – From ~75 bp to 23 kb.
- **DNA Recovery** – Typically, up to 5 µg total DNA per column can be eluted into as little as 6 µl water. For DNA 75 bp to 10 kb the recovery is 70-90%. For DNA 11 kb to 23 kb the recovery is 50-70%.
- **Sample Sources** – DNA excised from agarose gels.
- **Product Detergent Tolerance** – ≤5% Triton X-100, ≤5% Tween-20, ≤5% Sarkosyl, ≤0.1% SDS.

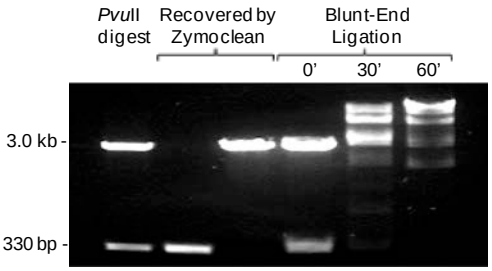
 This product is for research use only and should only be used by trained professionals. Some reagents included with this kit are irritants. Wear protective gloves and eye protection. Follow the safety guidelines and rules enacted by your research institution or facility.

Product Description

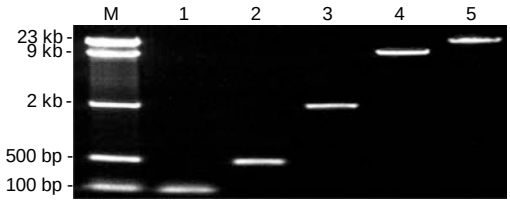
For **Assistance**, please contact Zymo Research Technical Support at 1-888-882-9682 or e-mail tech@zymoresearch.com.

The **Zymoclean™ Gel DNA Recovery Kit** provides a hassle-free method for the rapid purification and concentration of high-quality DNA from agarose gels. Simply add the specially formulated **Agarose Dissolving Buffer (ADB)** to the gel slice containing your DNA sample, let dissolve, and then transfer to the supplied **Zymo-Spin™ Column**. There is no need for organic denaturants or chloroform. Instead, the product utilizes *Fast-Spin* column technology to yield high-quality, purified DNA in just minutes. DNA purified using the **Zymoclean™ Gel DNA Recovery Kit** is perfectly suited for use in DNA ligation reactions, sequencing, DNA labeling reactions, PCR, etc.

The **Zymoclean™ Gel DNA Recovery Kit** employs a single-buffer system that allows for the efficient removal of DNA from agarose gel-slices and the subsequent adsorption of the DNA to the matrix of the supplied **Zymo-Spin™ Columns**. The DNA is washed twice then eluted with a small volume of water. The entire DNA purification/concentration procedure typically takes about 15 minutes. (See figures below).



Blunt-ended ligation of DNA fragments purified using the Zymoclean™ Gel DNA Recovery Kit. Fragments from plasmid DNA digested with *Pvu* II restriction endonuclease were purified, then mixed and ligated for the indicated amount of time.



Effectiveness of the Zymoclean™ Gel DNA Recovery Kit. Lanes: M: DNA Ladder; 1-5: DNA from ladder that was excised and recovered from gel.

Buffer Preparation

Before starting, add 24 ml 100% ethanol to the 6 ml **DNA Wash Buffer** concentrate (96 ml 100% ethanol to the 24 ml **DNA Wash Buffer** concentrate) to obtain the final **DNA Wash Buffer** solution. Alternatively, add 26 ml and 104 ml of 95% ethanol to the 6 ml and 24 ml sizes of the **DNA Wash Buffer** concentrate, respectively.

Protocol

1. Excise the DNA fragment[1] from the agarose gel using a razor blade or scalpel and transfer it to a 1.5 ml microcentrifuge tube.

2. Add 3 volumes of **ADB** to each volume of agarose excised from the gel (*e.g.* for 100 µl (mg) of agarose gel slice add 300 µl of **ADB)**.

3. Incubate at 37-55 °C for 5-10 minutes until the gel slice is completely dissolved[2].

   For DNA fragments >8 kb, following the incubation step, add one additional volume (equal to that of the gel slice) of water to the mixture for better DNA recovery (*e.g.* 100 µl agarose, 300 µl **ADB** and 100 µl water).

4. Transfer the melted agarose solution to a **Zymo-Spin™ Column** in a **Collection Tube**.

5. Centrifuge at ≥10,000 x *g* for 30-60 seconds. Discard the flow-through.

6. Add 200 µl of **Wash Buffer** to the column and centrifuge at ≥10,000 x *g* for 30 seconds. Discard the flow-through. Repeat the wash step.

7. Add ≥6 µl of water[3,4] directly to the column matrix. Place column into a 1.5 ml tube and centrifuge ≥10,000 x *g* for 30-60 seconds to elute DNA.

   Ultra-pure DNA in water is now ready for use.

Notes:

[1] The amount of agarose excised from the gel should be as small as possible.

[2] Do not incubate above 60 °C. It is important that the gel slice dissolves completely. This can be facilitated by gentle mixing during the incubation.

[3] Elution of DNA from the column is dependent on pH and temperature. If water is used, make sure the pH is >5.0. Waiting 1 minute after adding water to the column may improve the yield of larger (> 6 kb) DNA. For even larger DNA (> 10 kb) the total yield may be improved by eluting the DNA with 60-70 °C water.

[4] TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8.0) or modified TE (10 mM Tris, 0.1 mM EDTA, pH 8.5) can also be used for elution if required by your experiment.

Ordering Information

Product Description	Catalog No.	Kit Size
Zymoclean™ Gel DNA Recovery Kit supplied w/ **uncapped** columns	D4001	50 Preps.
Zymoclean™ Gel DNA Recovery Kit supplied w/ **capped** columns	D4007	50 Preps.
Zymoclean™ Gel DNA Recovery Kit supplied w/ **uncapped** columns	D4002	200 Preps.
Zymoclean™ Gel DNA Recovery Kit supplied w/ **capped** columns	D4008	200 Preps.

For Individual Sale	Catalog No.	Amount
ADB	D4001-1-50 D4001-1-100	50 ml 100 ml
DNA Wash Buffer (concentrate)	D4003-2-6 D4003-2-24	6 ml 24 ml
Zymo-Spin™ I Columns (Uncapped)	C1003-50 C1003-250	50 250
Zymo-Spin™ IC Columns (Capped)	C1004-50 C1004-250	50 250
Collection Tubes	C1001-50 C1001-500 C1001-1000	50 500 1000

Popular DNA Purification & Analysis Products from Zymo

Product	Description	Kit Size (Preps)	Catalog No. (Column Format)
DNA Clean & Concentrator™-5	Clean & concentrate DNA from any reaction or "crude" preparation in 2 minutes. A 6 µl minimum elution volume allows for highly concentrated DNA. Designed for samples containing up to 5 µg of DNA.	50 200 50 200	**D4003** (uncapped) **D4004** (uncapped) **D4013** (capped) **D4014** (capped)
DNA Clean & Concentrator™-25	Clean & concentrate DNA in minutes. 25 µl minimum elution volume allows for highly concentrated DNA. Designed for purifying up to 25 µg of DNA.	50 200	**D4005** **D4006**
DNA Clean & Concentrator™-100	Clean & concentrate DNA in minutes. 100 µl minimum elution volume allows for highly concentrated DNA. Designed for purifying up to 100 µg of DNA.	25 50	**D4029** **D4030**
DNA Clean & Concentrator™-500	Clean & concentrate DNA in minutes. 1 ml minimum elution volume allows for highly concentrated DNA. Designed for samples containing up to 500 µg of DNA.	10 20	**D4031** **D4032**
ZR-96 DNA Clean & Concentrator™-5	Quick (15 minute), high-output recovery of pure DNA from PCR, endonuclease digestions, plasmid preparations, etc. 10-15 µl minimum elution volume allows for highly concentrated DNA. Designed for samples containing up to 5 µg of DNA.	2x96 4x96	**D4023** **D4024**
Zymoclean™ Gel DNA Recovery Kit	Purify DNA from high and low-melting agarose gels in minutes	50 200	**D4001** **D4002**
ZR-96 Zymoclean™ Gel DNA Recovery Kit	High-throughput DNA purification from high and low-melting agarose gels.	2x96 4x96	**D4021** **D4022**
Pinpoint™ Slide DNA Isolation System	Recover genomic DNA from paraffin-embedded or fresh tissue sections for PCR. Ideal for isolating DNA from clinical tissue samples.	50	**D3001**
Zyppy™ Plasmid Miniprep Kit	Pellet-Free™ plasmid DNA purification in minutes: (alkaline lysis/spin column format for low 30 µl elution volume).	50 100 400	**D4036** **D4019** **D4020**
Zyppy™ Plasmid Midiprep Kit	Pellet-Free™ plasmid DNA purification in minutes: (alkaline lysis/spin column format and 150 µl minimum elution volume).	25 50	**D4025** **D4026**
Zyppy™ Plasmid Maxiprep Kit	High-purity plasmid DNA purification in minutes: (alkaline lysis/spin column format and 2 ml minimum elution volume).	10 20	**D4027** **D4028**
ZR Genomic DNA I Kit™	Genomic DNA isolation from whole blood, tissue culture cells, solid tissue and liquid samples. (Silica bead format is scalable to fit your requirements).	100 400	**D3004** **D3005**
ZR Genomic DNA II Kit™	Genomic DNA purification from whole blood, tissue culture cells, solid tissue and liquid samples. No requirement for beads or phenol chloroform.	50 200 50 200	**D3006** (uncapped) **D3007** (uncapped) **D3024** (capped) **D3025** (capped)
ZR-96 Genomic DNA Kit™	High-output genomic DNA purification from whole blood, tissue culture cells, solid tissue and liquid samples. No requirement for beads or phenol chloroform.	2x96 4x96	**D3010** **D3011**
ZR Soil microbe DNA Kit™	Simple, rapid isolation of humic-free, PCR-quality genomic DNA from soil microbes.	50	**D6001**
ZR Fungal/Bacterial DNA Kit™	Simple, rapid isolation of PCR-quality genomic DNA from fungi.	50	**D6005**
ZR Fecal DNA Kit™	Simple, rapid isolation of PCR-quality genomic DNA from feces.	50	**D6010**
ZR Viral DNA Kit™	Isolation of viral DNA from cell-free body fluids or sample mixtures containing cells at concentrations less than 10^5 cells per ml.	50 200	**D3015** **D3016**
ZR-96 Viral DNA Kit™	High-output (96-well) isolation of viral DNA from cell-free body fluids or sample mixtures containing cells at concentrations less than 10^5 cells per ml.	2x96 4x96	**D3017** **D3018**
EZ DNA Methylation™ Kit	For the conversion of unmethylated cytosines in DNA to uracil via the chemical-denaturation of DNA and a specially designed CT Conversion Reagent. *Fast-Spin* technology ensures ultra-pure, converted DNA for subsequent DNA methylation analysis.	50 200 2x96 2x96	**D5001** **D5002** **D5003** Shallow **D5004** Deep Well
EZ DNA Methylation-Gold™ Kit	For the fast (3 hr.) conversion of unmethylated cytosines in DNA to uracil via heat/chemical-denaturation of DNA and a specially designed CT Conversion Reagent. *Fast-Spin* technology ensures ultra-pure, converted DNA for subsequent DNA methylation analysis.	50 200 2x96 2x96	**D5005** **D5006** **D5007** Shallow **D5008** Deep Well
EZ DNA Methylation-Direct™ Kit	Features simple and reliable DNA bisulfite conversion directly from blood, tissue (FFPE/LCM), and cells without the prerequisite for DNA purification in as little as 4-6 hrs. The increased sensitivity of this kit makes it possible to amplify bisulfite converted DNA from as few as 10 cells or 50 pg DNA.	50 200 2x96 2x96	**D5020** **D5021** **D5022** Shallow **D5023** Deep Well

***Bulk quantities are available upon request. Please contact: busdev@zymoresearch.com or call 1-888-882-9682 for assistance.**