



**ZYMO RESEARCH**

*The Beauty of Science is to Make Things Simple*

# INSTRUCTION MANUAL

## Zymoclean™ Large Fragment DNA Recovery Kit

Catalog Nos. **D4045 & D4046**

### Highlights

- Quick (15 minute) spin column recovery of large-sized DNA (e.g., genomic, plasmid (BAC/PAC), viral, phage, etc.) from agarose gels. *No messy precipitations!*
- Unique column design for low volume ( $\geq 10 \mu\text{l}$ ) elution of ultra-pure, high-yield DNA.
- Eluted DNA is well suited for use in PCR, sequencing, endonuclease digestion, ligation, etc.

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

## Product Contents

<b>Zymoclean™ Large Fragment DNA Recovery Kit (Kit Size)</b>	<b>D4045 (25 preps.)</b>	<b>D4046 (100 preps.)</b>	<b>Storage Temperature</b>
<b>ADB</b>	50 ml	100 ml	Room Temp.
<b>DNA Wash Buffer<sup>1</sup></b>	6 ml	24 ml	Room Temp.
<b>Zymo-Spin™ IC-XL Columns</b>	25	100	Room Temp.
<b>Collection Tubes</b>	50	100	Room Temp.
<b>Instruction Manual</b>	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.

<sup>1</sup> 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 50 bp to ~200 kb.
- **DNA Recovery** – Typically, up to 10 µg total DNA per column can be eluted into ≥10 µl water. For DNA 50 bp to 23 kb the recovery is 70-90%. For DNA ≥23 kb, the recovery is 50-70%.
- **Sample Sources** – DNA excised from TAE and TBE-buffered agarose gels.
- **Product Detergent Tolerance** – ≤5% Triton X-100, ≤5% Tween-20, ≤5% Sarkosyl, ≤0.1% SDS.

Note: ™ Trademarks of Zymo Research Corporation. This product is for research use only and should only be used by trained professionals. It is not intended for use in diagnostic procedures. 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.

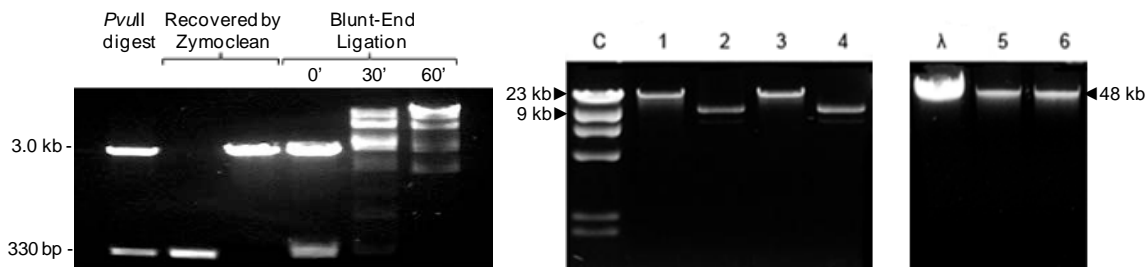
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## Product Description

The **Zymoclean™ Large Fragment DNA Recovery Kit** provides a streamlined method for the rapid purification and concentration of high-quality large-sized DNA from agarose gels. Simply add the specially formulated **Agarose Dissolving Buffer (ADB)** to the gel slice containing a DNA sample, let dissolve, and then transfer to the supplied **Zymo-Spin™ IC-XL Column**. There is no need for organic denaturants or chloroform. Instead, the product utilizes unique spin column technology to yield high-quality, purified DNA in just minutes. DNA purified using the **Zymoclean™ Large Fragment DNA Recovery Kit** is ideal for PCR, sequencing, endonuclease digestion, ligation, etc. The entire procedure typically takes about 15 minutes.

For **Technical Assistance**, please contact those at **Zymo Research's Technical Department** at 1-888-882-9682 or E-mail [tech@zymoresearch.com](mailto:tech@zymoresearch.com).



**Blunt-ended ligation of DNA fragments purified using the Zymoclean™ Large Fragment DNA Recovery Kit.** Fragments from plasmid DNA digested with PvuII were purified, then mixed and ligated for the times indicated in the figure (above).

**DNA recovery (lanes 1-6) from HindIII-digested lambda DNA (lane C) and lambda DNA (λ) using the Zymoclean™ Large Fragment DNA Recovery Kit.** Lanes 1, 3: 23 kb and 2, 4: 9 kb bands, respectively. Lanes 5, 6: ~48 kb bands.

## **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, 26 ml and 104 ml 95% ethanol can be added.

## **Protocol**

*Note: all centrifugation steps should be performed between 10,000-16,000 x g.*

1. Excise the DNA fragment from the agarose gel<sup>1</sup> 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<sup>2</sup>.
4. Transfer the melted agarose solution to a **Zymo-Spin™ IC-XL Column** in a **Collection Tube**.
5. Centrifuge for 1 minute. Discard the flow-through.
6. Add 200 µl of **Wash Buffer** to the column and centrifuge for 30 seconds. Discard the flow-through. Repeat the wash step.
7. Add ≥10 µl of water<sup>3,4</sup> directly to the column matrix and wait for 1 minute. Place column into a 1.5 ml tube and centrifuge for 30 seconds to elute the DNA.

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

### **Notes:**

<sup>1</sup> The amount of agarose excised from the gel should be as small as possible.

<sup>2</sup> 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.

<sup>3</sup> Elution of DNA from the column is dependent on pH and temperature. If water is used, make sure the pH is >6.0. The total yield may be improved by eluting the DNA with 60-70 °C water.

<sup>4</sup> 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**

<b>Product Description</b>	<b>Catalog No.</b>	<b>Kit Size</b>
<b>Zymoclean™ Large Fragment DNA Recovery Kit</b>	D4045	25 Preps.
	D4046	100 Preps.

<b>For Individual Sale</b>	<b>Catalog No.</b>	<b>Amount</b>
<b>ADB</b>	D4001-1-50	50 ml
	D4001-1-100	100 ml
<b>DNA Wash Buffer</b> (concentrate)	D4003-2-6	6 ml
	D4003-2-24	24 ml
<b>Collection Tubes</b>	C1001-50	50
	C1001-500	500
	C1001-1000	1000

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## Popular DNA Purification Products from Zymo Research

Product	Format	Kit Size	Cat No.
<b>Fragment DNA Clean-up, Concentration &amp; Recovery</b>			
DNA Clean & Concentrator™-5	Spin Column Format (up to 5 µg/prep.)	50 preps. 200 preps.	D4003*, D4013 D4004*, D4014
DNA Clean & Concentrator™-25	Spin Column Format (up to 25 µg/prep.)	50 preps. 200 preps.	D4005*, D4033 D4006*, D4034
DNA Clean & Concentrator™-100	Spin Column Format (up to 100 µg/prep.)	25 preps. 50 preps.	D4029 D4030
DNA Clean & Concentrator™-500	Spin Column Format (up to 500 µg/prep.)	10 preps. 20 preps.	D4031 D4032
ZR-96 DNA Clean & Concentrator™-5	96-Well Format (up to 5 µg/well; deep well)	2x96 preps. 4x96 preps.	D4023 D4024
ZR-96 DNA Clean-up Kit™	96-Well Format (up to 5 µg/well; shallow well)	2x96 preps. 4x96 preps.	D4017 D4018
ZR DNA Sequencing Clean-up Kit™	Spin Column Format (up to 5 µg/prep.)	50 preps. 200 preps.	D4050 D4051
ZR-96 DNA Sequencing Clean-up Kit™	96-Well Format (up to 5 µg/well)	2x96 preps. 4x96 preps.	D4052 D4053
OneStep™ PCR Inhibitor Removal Kit	Spin Column Format (up to 25 µg/prep.)	50 preps.	D6030
OneStep-96™ PCR Inhibitor Removal Kit	96-Well Format (up to 5 µg/well)	2x96 preps.	D6035
Zymoclean™ Gel DNA Recovery Kit	Spin Column Format (up to 5 µg/prep.)	50 preps. 200 preps.	D4001 D4002
ZR-96 Zymoclean™ Gel DNA Recovery Kit	96-Well Format (up to 5 µg/well)	2x96 preps. 4x96 preps.	D4021 D4022
<b>Plasmid DNA Isolation</b>			
Zyppy™ Plasmid Miniprep Kit	Pellet Free, Spin Column Format	50 preps. 100 preps. 400 preps.	D4036 D4019 D4020
Zyppy™ Plasmid Midiprep Kit	Pellet Free, Spin Column Format	25 preps. 50 preps.	D4025 D4026
Zyppy™ Plasmid Maxiprep Kit	Spin/Vacuum Column Format	10 preps. 20 preps.	D4027 D4028
<b>Genomic DNA Isolation</b>			
ZR Genomic DNA I Kit™	Silica Bead Format - Scaleable	100 preps. 400 preps.	D3004 D3005
ZR Genomic DNA II Kit™	Spin Column Format (up to 25 µg/prep.)	50 preps. 200 preps.	D3006*, D3024 D3007*, D3025
ZR-96 Genomic DNA Kit™	96-Well Format (up to 5 µg/well)	2x96 preps. 4x96 preps. 10x96 preps.	D3010 D3011 D3012
ZR Genomic DNA™-Tissue MiniPrep	Spin Column Format (up to 25 µg/prep.)	50 preps. 200 preps.	D3050 D3051
ZR-96 Genomic DNA™-Tissue MiniPrep	96-Well Format (up to 5 µg/well)	2x96 preps. 4x96 preps. 10x96 preps.	D3055 D3056 D3057
Pinpoint™ Slide DNA Isolation System	For Archived Tissue Sections, Spin Column Format (up to 5 µg/prep.)	50 preps.	D3001
ZR Serum DNA Kit™	Silica Bead Format - Scaleable	scaleable	D3013
ZR Urine DNA Isolation Kit™	Filtration, Spin Column Format (up to 5 µg/prep.)	20 preps.	D3060
ZR Viral DNA Kit™	Spin Column Format (up to 5 µg/prep.)	50 preps. 200 preps.	D3015 D3016
ZR-96 Viral DNA Kit	96-Well Format (up to 5 µg/well)	2x96 preps. 4x96 preps.	D3017 D3018
<b>Environmental DNA Isolation</b>			
ZR Soil Microbe DNA Kit™	Bead Bashing, Spin Column Format (up to 25 µg/prep.)	50 preps.	D6001
ZR-96 Soil Microbe DNA Kit™	Bead Bashing, 96-Well Format (up to 5 µg/well)	2x96 preps.	D6002
ZR Fungal/Bacterial DNA Kit™	Bead Bashing, Spin Column Format (up to 25 µg/prep.)	50 preps.	D6005
ZR-96 Fungal/Bacterial DNA Kit™	Bead Bashing, 96-Well Format (up to 5 µg/well)	2x96 preps.	D6006
ZR Fecal DNA Kit™	Bead Bashing, Spin Column Format (up to 25 µg/prep.)	50 preps.	D6010
ZR-96 Fecal DNA Kit™	Bead Bashing, 96-Well Format (up to 5 µg/well)	2x96 preps.	D6011
ZR Tissue & Insect DNA Kit-5™	Bead Bashing, Spin Column Format (up to 5 µg/prep.)	50 preps.	D6015
ZR Tissue & Insect DNA Kit-25™	Bead Bashing, Spin Column Format (up to 25 µg/prep.)	50 preps.	D6016
ZR-96 Tissue & Insect DNA Kit™	Bead Bashing, 96-Well Format (up to 5 µg/well)	2x96 preps.	D6017
ZR Plant/Seed DNA Kit™	Bead Bashing, Spin Column Format (up to 25 µg/prep.)	50 preps.	D6020
ZR-96 Plant/Seed DNA Kit™	Bead Bashing, 96-Well Format (up to 5 µg/well)	2x96 preps.	D6021

\* Uncapped Spin Column Format

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