



ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

INSTRUCTION MANUAL

Genomic DNA Clean & Concentrator™

Catalog Nos. **D4010 & D4011**

Highlights

- Quick (5 minute) spin column recovery of large-sized DNA (e.g., genomic, mitochondrial, plasmid (BAC/PAC), viral, phage, (wga)DNA, etc.) from any enzymatic reaction or impure preparation (e.g., Proteinase K digestion). *No messy precipitations!*
- Unique spin column for low volume (≥ 10 μ l) elution of ultra-pure, high-yield DNA.
- Eluted DNA is ideal for PCR, restriction endonuclease digestion, Sanger and Next-Gen sequencing, 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

Genomic DNA Clean & Concentrator™ (Kit Size)	D4010 (25 preps)	D4011 (100 preps)	Storage Temperature
ChIP DNA Binding Buffer	50 ml	2x50 ml	Room Temp.
DNA Wash Buffer¹	6 ml	24 ml	Room Temp.
Zymo-Spin™ IC-XL Columns	25	100	Room Temp.
Collection Tubes	50	100	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 the **DNA Wash Buffer** label.

Specifications

- **DNA Purity** – Ultra-pure ($A_{(260/280)} \geq 1.8$) high molecular weight DNA is eluted in water and is especially well suited for PCR, sequencing, endonuclease digestion, etc.
- **DNA Size Limits** – Capable of purifying small DNA fragments >50 bp and large sized DNAs >200 kb.
- **DNA Recovery** – Typically, up to 10 µg total DNA per column can be eluted with ≥10 µl water. Recovery of DNA ranges from 70-95%.
- **Sample Sources** – DNA from impure preparations of genomic DNA (e.g., Proteinase K digestions), plasmid DNA (including BAC), viral DNA, and *whole genome amplified* (wga)DNA.

Can also be used for the purification of low molecular weight DNA (50 bp to 10 kb) from PCR, endonuclease digestion, post-RT cDNA synthesis, etc.

- **Product Detergent Tolerance** – ≤5% Triton X-100, ≤5% Tween-20, ≤5% Sarkosyl, ≤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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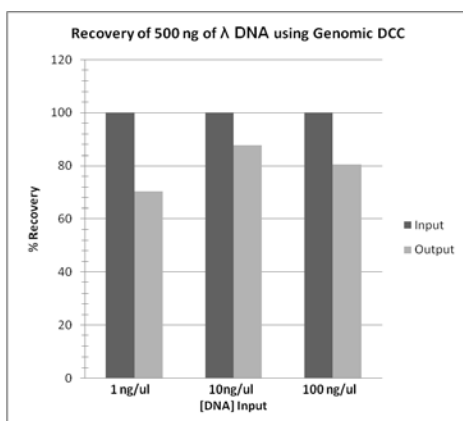
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Product Description

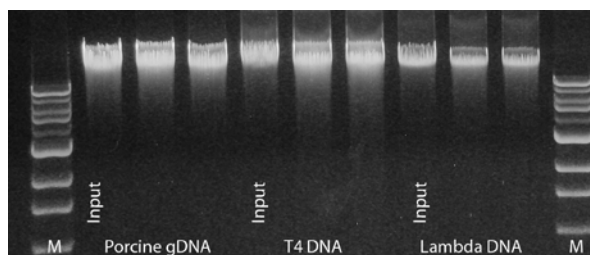
The **Genomic DNA Clean & Concentrator™ (DCC™)** is for the quick (5 minute) recovery of ultra-pure, large-sized DNA (e.g., genomic, mitochondrial, plasmid (BAC/PAC), viral, phage, (wga)DNA, etc.) from any enzymatic reaction or impure preparation (e.g., Proteinase K digestion). There is no need for organic denaturants, chloroform, or messy precipitations: simply add the specially formulated **ChIP DNA Binding Buffer** to a sample and then transfer the mixture to the supplied **Zymo-Spin™ Column**. Eluted DNA is suitable for sequencing, PCR, endonuclease digestion, and other enzymatic procedures. The product is also compatible with smaller DNAs (50 bp to 10 kb) from PCR, digestions, crude plasmid preparations, cDNA synthesis, etc.

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

Typical Genomic DCC™ Applications	
Post-Amplified DNA Clean-up	Efficient desalting of DNA from PCR with the removal of DNA polymerases, primers and free dNTPs. Compatible with whole genome amplified (wga)DNA.
DNA Clean-up From Enzymatic Reactions	Efficient desalting of DNA with the removal of DNA polymerases, modifying enzymes, RNA polymerases, ligases, kinases, nucleases, phosphatases, endonucleases, etc. Ideal for DNA purification from proteinase K digestions.
Post-Reverse Transcription (RT) & cDNA Clean-up	Efficient purification of DNA following RT, either as a DNA/RNA complex or as single stranded cDNA following chemical hydrolysis of the RNA template.
Plasmid (BAC/PAC) & Genomic DNA Clean-up	Efficient purification of impure preparations of plasmid (e.g., BAC/PAC) and genomic DNA. DNA purified and concentrated using the DCC™ has proven an excellent substrate for high quality DNA sequencing.
Isotope & Dye Removal	Efficiently removes unincorporated fluorescent (<i>i.e.</i> , AMCA, FITC, BIO, DIG, Cy3, Cy5, FAM, <i>etc.</i>) and radiolabeled dNTP derivatives from DNA following <i>in vitro</i> labeling reactions.



Lambda phage DNA (48.5 kb) is effectively recovered from various concentrations of starting material using the **Genomic DCC™**.



High molecular weight DNA is efficiently purified using the Genomic DCC™. Porcine gDNA (~35-50 kb), T4 phage DNA (170 kb), and lambda phage DNA (48.5 kb) were purified (in duplicate) from input material using the Genomic DCC™. Eluted DNAs were analyzed in a 0.8% (w/v) TAE/agarose/EtBr gel (shown above). The size marker "M" is a 1 kb ladder (Zymo Research).

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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 used.

Protocol

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

It may be necessary to add RNase A to cell lysates prior to performing the procedure to ensure RNA-free DNA will be recovered in Step 5.

1. In a 1.5 ml microcentrifuge tube, add 2 or 5 volumes of **ChIP DNA Binding Buffer** to each volume of DNA sample (see table below). Mix thoroughly.

Application	DNA Binding Buffer:Sample	Example
Plasmid, genomic DNA (DNA >2 kb)	2:1	200 µl:100 µl
PCR product, cDNA, DNA fragment	5:1	500 µl:100 µl

2. Transfer mixture to a provided **Zymo-Spin™ IC-XL Column** in a **Collection Tube**.

Note: The sample capacity of the column is 1 ml. It may be necessary to load and spin a column multiple times if a sample has a volume larger than 1 ml.

3. Centrifuge for 30 seconds. Discard the flow-through.
4. Add 200 µl **Wash Buffer** to the column. Centrifuge for 1 minute. Repeat this wash step.
5. Add ≥10 µl water directly to the column matrix, wait for 1 minute, and then centrifuge the column in a clean 1.5 ml microcentrifuge tube for 30 seconds to elute the DNA.

Note: 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.

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 for your experiments.

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

Ordering Information

Product Description	Catalog No.	Kit Size (preps.)
Genomic DNA Clean & Concentrator™ (For purification of large DNA, up to 10 µg DNA per prep.)	D4010 D4011	25 100
DNA Clean & Concentrator™-5 (For purification of up to 5 µg DNA per prep.) supplied w/ uncapped columns	D4003 D4004	50 200
DNA Clean & Concentrator™-5 (For purification of up to 5 µg DNA per prep.) supplied w/ capped columns	D4013 D4014	50 200
ZR-96 DNA Clean & Concentrator™-5 (For 96-well purification of up to 5 µg DNA per well.)	D4023 D4024	2x96 4x96
DNA Clean & Concentrator™-25 Kit (For purification of up to 25 µg DNA per prep.) supplied w/ uncapped columns	D4005 D4006	50 200
DNA Clean & Concentrator™-25 Kit (For purification of up to 25 µg DNA per prep.) supplied w/ capped columns	D4033 D4034	50 200
DNA Clean & Concentrator™-100 Kit (For purification of up to 100 µg DNA per prep.)	D4029 D4030	25 50
DNA Clean & Concentrator™-500 Kit (For purification of up to 500 µg DNA per prep.)	D4031 D4032	10 20

For Individual Sale	Catalog No.	Amount
ChIP DNA Binding Buffer	D5201-1-50	50 ml
DNA Wash Buffer (concentrate)	D4003-2-6 D4003-2-24	6 ml 24 ml
Collection Tubes	C1001-50 C1001-500 C1001-1000	50 500 1000

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Popular DNA Purification Products from Zymo Research

Product	Format	Kit Size	Cat No.
Fragment DNA Clean-up, Concentration & Recovery			
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
Genomic DNA Clean & Concentrator™	Spin Column Format (up to 10 µg/prep.)	25 preps. 100 preps.	D4010 D4011
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
Zymoclean™ Large Fragment DNA Recovery Kit	Spin Column Format (up to 10 µg/prep.)	25 preps. 100 preps.	D4045 D4046
Plasmid DNA Isolation			
Zyppy™ Plasmid Miniprep Kit	Pellet Free, Spin Column Format	50 preps. 100 preps. 400 preps. 800 preps.	D4036 D4019 D4020 D4037
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
ZR Plasmid Miniprep™-Classic	Spin Column Format	100 preps. 400 preps. 800 preps.	D4015 D4016 D4054
ZR BAC DNA Miniprep Kit	BAC/PAC plasmid DNA Isolation. Spin Column Format	25 preps. 100 preps.	D4048 D4049
Genomic DNA Isolation			
Quick-gDNA™ Kits (Total DNA from blood, cells, soft tissues, etc. w/o Proteinase K digestion in <10 min.)	MicroPrep. (up to 5 µg/prep.) MiniPrep. (up to 10 µg/prep.) MidiPrep. (up to 125 µg/prep.) 96-Well Format. (up to 125 µg/prep.)	50 preps. 50 preps. 25 preps. 2x96 preps.	D3020 D3024 D3100 D3010
ZR Genomic DNA-Tissue Kits (Total DNA from blood, cells, solid & FFPE tissues, etc. w/ Proteinase K digestion)	MicroPrep. (up to 5 µg/prep.) MiniPrep. (up to 10 µg/prep.) MidiPrep. (up to 125 µg/prep.) 96-Well Format. (up to 125 µg/prep.)	50 preps. 50 preps. 25 preps. 2x96 preps.	D3040 D3050 D3110 D3055
Environmental DNA Isolation			
ZR Soil Microbe DNA Kits™	MicroPrep. Bead Bashing, Spin Column Format (up to 5 µg/prep.) MiniPrep. Bead Bashing, Spin Column Format (up to 25 µg/prep.) MidiPrep. Bead Bashing, Spin Column Format (up to 125 µg/prep.) 96-Well Format. Bead Bashing (up to 5 µg/well)	50 preps. 50 preps. 25 preps. 2x96 preps.	D6003 D6001 D6101 D6002
ZR Fungal/Bacterial DNA Kits™	MicroPrep. Bead Bashing, Spin Column Format (up to 5 µg/prep.) MiniPrep. Bead Bashing, Spin Column Format (up to 25 µg/prep.) MidiPrep. Bead Bashing, Spin Column Format (up to 125 µg/prep.) 96-Well Format. Bead Bashing (up to 5 µg/well)	50 preps. 50 preps. 25 preps. 2x96 preps.	D6007 D6005 D6105 D6006
ZR Fecal DNA Kits™	MicroPrep. Bead Bashing, Spin Column Format (up to 5 µg/prep.) MiniPrep. Bead Bashing, Spin Column Format (up to 25 µg/prep.) MidiPrep. Bead Bashing, Spin Column Format (up to 125 µg/prep.) 96-Well Format. Bead Bashing (up to 5 µg/well)	50 preps. 50 preps. 25 preps. 2x96 preps.	D6012 D6010 D6110 D6011
ZR Tissue & Insect DNA Kits™	MicroPrep. Bead Bashing, Spin Column Format (up to 5 µg/prep.) MiniPrep. Bead Bashing, Spin Column Format (up to 25 µg/prep.) MidiPrep. Bead Bashing, Spin Column Format (up to 125 µg/prep.) 96-Well Format. Bead Bashing (up to 5 µg/well)	50 preps. 50 preps. 25 preps. 2x96 preps.	D6015 D6016 D6115 D6017
ZR Plant/Seed DNA Kits™	MicroPrep. Bead Bashing, Spin Column Format (up to 5 µg/prep.) MiniPrep. Bead Bashing, Spin Column Format (up to 25 µg/prep.) MidiPrep. Bead Bashing, Spin Column Format (up to 125 µg/prep.) 96-Well Format. Bead Bashing (up to 5 µg/well)	50 preps. 50 preps. 25 preps. 2x96 preps.	D6022 D6020 D6120 D6021

* Uncapped Spin Column Format (Also, see our website at: www.zymoresearch.com for additional kit sizes and formats)

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