



**ZYMO RESEARCH**

*The Beauty of Science is to Make Things Simple*

# INSTRUCTION MANUAL

## **ZR-96 Oligo Clean & Concentrator™**

Catalog Nos. **D4062 & D4063**

### **Highlights**

- Quick, high-throughput (*96-well*) recovery of ultra-pure DNA and RNA oligonucleotides.
- Complete removal of dyes, salts, enzymes, nucleotides, and short oligos.
- $\geq 10$   $\mu$ l elution with zero retention *Fast Spin* plates.
- Eluted DNA/RNA is well suited for use in hybridization, sequencing, PCR, ligation, *etc.*

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Phone: (949) 679-1190 • Toll Free: (888) 882-9682 • Fax: (949) 266-9452 • [info@zymoresearch.com](mailto:info@zymoresearch.com) • [www.zymoresearch.com](http://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

<b>ZR-96 Oligo Clean &amp; Concentrator™</b> (Kit Size)	<b>D4062</b> (2x 96 Preps.)	<b>D4063</b> (4x 96 Preps.)	<b>Storage Temperature</b>
<b>Oligo Binding Buffer</b>	40 ml	2x 40 ml	Room Temp.
<b>DNA Wash Buffer<sup>1</sup></b>	48 ml	2x 48 ml	Room Temp.
<b>Zymo-Spin™ I-96 Plate</b>	2	4	Room Temp.
<b>Collection Plate</b>	4	8	Room Temp.
<b>Elution Plate</b>	2	4	Room Temp.
<b>Cover Foil</b>	2	4	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 the **DNA Wash Buffer** label.  
(DNA Wash Buffer is compatible with DNA and RNA.)

## Applications

<b>Isotope and Dye Removal</b>	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.
<b>DNA Fragment Clean-up From Enzymatic Reactions</b>	Efficient desalting of DNA with the removal of DNA polymerases, modifying enzymes, RNA polymerases, ligases, kinases, nucleases, phosphatases, endonucleases, <i>etc.</i>
<b>Post-Reverse Transcription (RT) &amp; cDNA Clean-up</b>	Efficiently purifies DNA following RT, either as a DNA/RNA complex or as single stranded cDNA following chemical hydrolysis of the RNA template ( <i>see page 3</i> ).

## Specifications

- **Sample Sources** – Enzymatic reaction mixtures containing oligonucleotides  $\geq 16$  nt (radioactive-, biotin-, DIG-labeled, *etc.*).
- **Size Limits** – For oligonucleotides  $\geq 16$  nt, up to 23 kb.
- **Compatibility** – single-stranded (ss) and double-stranded (ds) DNA and RNA.
- **Recovery** – Binding capacity of the Zymo-Spin™ I-96 Plate is 10  $\mu$ g of ssDNA/RNA or 5  $\mu$ g of dsDNA with a typical recovery  $>90\%$ . The plate can be eluted with  $\geq 10$   $\mu$ l.
- **Purity** – High-quality DNA/RNA ( $A_{260}/A_{280\text{ nm}} > 1.8$ ;  $A_{260}/A_{230\text{ nm}} > 1.8$ ) eluted with water is especially well suited for hybridization, sequencing, ligation, and PCR.
- **Detergent Tolerance** –  $\leq 5\%$  Triton X-100,  $\leq 5\%$  Tween-20,  $\leq 5\%$  Sarkosyl,  $\leq 0.1\%$  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.

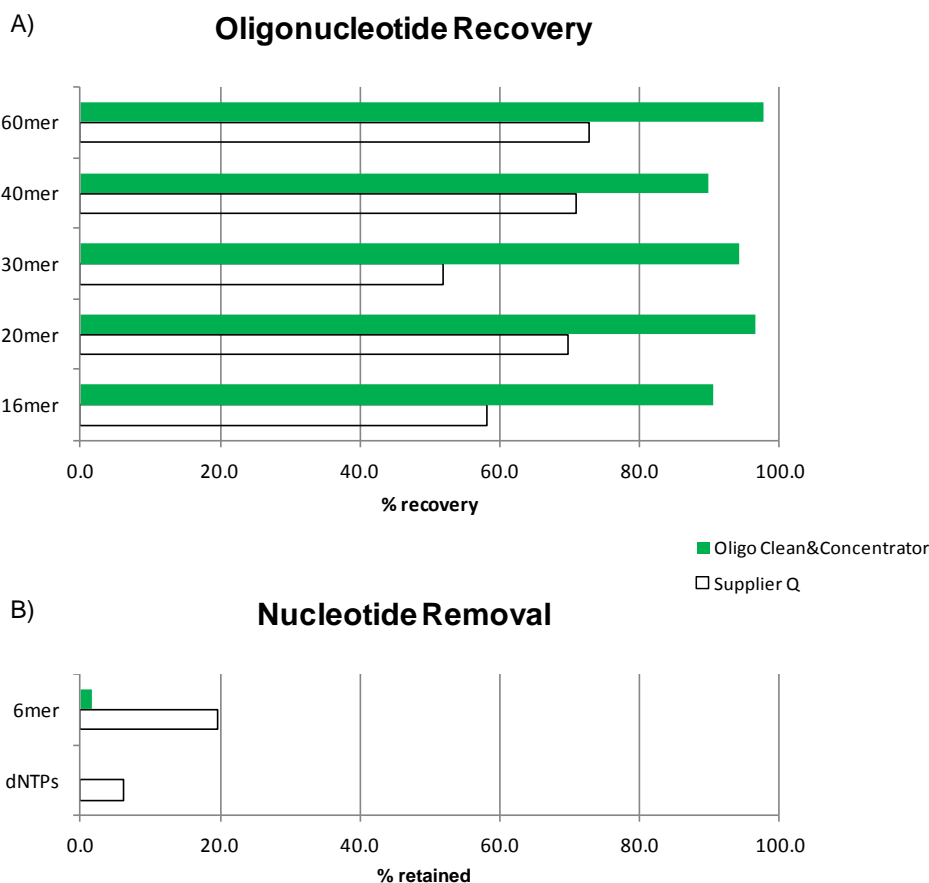
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## Product Description

The **ZR-96 Oligo Clean & Concentrator™** provides a streamlined method for high-throughput (96-well) recovery and clean-up of DNA and RNA oligonucleotides  $\geq 16$  nt from labeling (radioactive, biotin, DIG *etc.*) and other enzymatic reactions. Unincorporated nucleotides, short oligos, dyes, enzymes, and salts are effectively removed by the clean-up procedure.

There is no need for organic denaturants or chloroform. Instead, the kit features *Fast Spin* plate technology and employs a single-buffer system that allows for efficient oligonucleotide adsorption to the matrix of **Zymo-Spin™ I-96 Plate**. Oligonucleotide is washed and concentrated into a small volume of water ( $\geq 10 \mu\text{l}$ ). Purified oligonucleotide is suitable for hybridization, gel shift assays, enzymatic reactions, ligation, sequencing, microarray analysis, *etc.*

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



The **Oligo Clean & Concentrator™** facilitates  $>90\%$  recovery of ssDNA oligonucleotides (**A**) and efficient short oligo and nucleotide removal (**B**).

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## **Buffer Preparation**

Before starting, add 192 ml 100% ethanol (208 ml of 95% ethanol) to the 48 ml **DNA Wash Buffer** concentrate.

## **Protocol**

1. Add 100  $\mu$ l **Oligo Binding Buffer** to 50  $\mu$ l sample<sup>1,2</sup>.
2. Add 400  $\mu$ l ethanol<sup>3</sup> (95-100%), mix briefly by pipetting and transfer the mixture to a well of the provided **Zymo-Spin™ I-96 Plate**<sup>4</sup> mounted on a **Collection Plate**.  
**Note:** If required, scale up volumes proportionally.
3. Centrifuge at 5,000 x *g* for 5 minutes. Discard the flow-through.  
**For radioactive samples:** Transfer the plate onto a new collection plate then discard the plate containing the radioactive flow-through appropriately.
4. Add 800  $\mu$ l **DNA Wash Buffer** to each well. Centrifuge the plate at 5,000 x *g* for 5 minutes and discard the flow-through. Then centrifuge at 5,000 x *g* for 5 minutes to ensure complete removal of the wash buffer.
5. Transfer the plate onto the **Elution Plate**. Add 25  $\mu$ l water<sup>5</sup> directly to the column matrix and centrifuge at 5,000 x *g* for 5 minutes to elute the oligonucleotide.

Ultra-pure oligonucleotide in water is now ready for use<sup>6</sup>.

### **Notes:**

<sup>1</sup> Minimum recommended sample volume is 50  $\mu$ l (adjust with water).

<sup>2</sup> For sample preparation, the **Collection Plate** may be used.

<sup>3</sup> For DNA/RNA  $\geq$ 80 nt, only 200  $\mu$ l ethanol are required.

<sup>4</sup> The well capacity is ~800  $\mu$ l. For larger samples, it may be necessary to load and spin the plate multiple times.

<sup>5</sup> TE buffer can also be used for elution if required.

<sup>6</sup> Use the **Cover Foil** to prevent evaporation and to store purified samples in the **Elution Plate**.

### ***cDNA clean-up following reverse transcription***

The **Oligo Clean & Concentrator** can be used to effectively clean and concentrate first-strand cDNA following reverse transcription (RT) and hydrolysis. The **Oligo Binding Buffer** can effectively neutralize the hydrolysis reaction and the recovered cDNA may be used directly for microarray analysis, etc.

#### ***Hydrolysis reaction***

To each 30-50  $\mu$ l of RT reaction, add 10  $\mu$ l 0.5 M EDTA followed by 10  $\mu$ l 1.0 M NaOH, then mix. Incubate at 65°C for 15 minutes.

#### ***Clean-up***

See *protocol* above.

**Ordering Information**

Product Description	Catalog No.	Kit Size
<b>ZR-96 Oligo Clean &amp; Concentrator™</b>	D4062	2x 96 Preps.
	D4063	4x 96 Preps.
<b>Oligo Clean &amp; Concentrator™-5</b>	D4060	50 Preps.
	D4061	200 Preps.

For Individual Sale	Catalog No.	Amount
<b>Oligo Binding Buffer</b>	D4060-1-10	10 ml
	D4060-1-40	40 ml
<b>DNA Wash Buffer</b> (concentrate)	D4003-2-24	24 ml
	D4003-2-48	48 ml
<b>Zymo-Spin™ I-96 Plate</b>	C2004	2 plates
<b>Collection Plate</b>	C2002	2 plates
<b>Elution Plate</b>	C2003	2 plates

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## Popular Products From Zymo Research

Product	Description	Kit Size (Preps.)	Catalog No. (Format)
<b>Fragment DNA Purification</b>			
<b>DNA Clean &amp; Concentrator™-5</b>	Clean and concentrate up to 5 µg DNA into ≥6 µl elution volume in as little as 2 minutes with no wash residue carryover.	50 200 50 200	<b>D4003</b> (uncapped) <b>D4004</b> (uncapped) <b>D4013</b> (capped) <b>D4014</b> (capped)
<b>DNA Clean &amp; Concentrator™-25</b>	Clean and concentrate 25 µg of DNA into ≥25 µl elution volume in as little as 2 minutes with no wash residue carryover.	50 200 50 200	<b>D4005</b> (uncapped) <b>D4006</b> (uncapped) <b>D4033</b> (capped) <b>D4034</b> (capped)
<b>ZR-96 DNA Clean &amp; Concentrator™-5</b>	Quick (15 minute), high-output recovery of up to 5 µg pure DNA into 10-15 µl minimum elution volume allows for highly concentrated DNA.	2 x 96 4 x 96	<b>D4023</b> <b>D4024</b>
<b>Genomic DNA Clean &amp; Concentrator™</b>	Quick (5 minute) clean-up of up to 10 µg high molecular weight DNA (≤200 kb) from any enzymatic reaction or impure preparation without precipitations.	25 100	<b>D4010</b> (capped) <b>D4011</b> (capped)
<b>Zymoclean™ Gel DNA Recovery Kit</b>	Purify DNA from high and low-melting agarose gels in minutes.	50 200 50 200	<b>D4001</b> (uncapped) <b>D4002</b> (uncapped) <b>D4007</b> (capped) <b>D4008</b> (capped)
<b>ZR-96 Zymoclean™ Gel DNA Recovery Kit</b>	High-throughput DNA purification from high and low-melting agarose gels.	2 x 96 4 x 96	<b>D4021</b> <b>D4022</b>
<b>Zymoclean™ Large Fragment DNA Recovery Kit</b>	Purify high molecular weight DNA (≤ 200 kb) from high and low-melting agarose gels in minutes.	25 100	<b>D4045</b> (capped) <b>D4046</b> (capped)
<b>OneStep™ PCR Inhibitor Removal Kit</b>	Fast, one step procedure for removal of PCR inhibitors such as polyphenolics, humic/fulvic acids, melanin, etc. for successful PCR and other downstream applications.	50 2 x 96	<b>D6030</b> <b>D6035</b>
<b>Plasmid DNA Purification</b>			
<b>Zyppy™ Plasmid Miniprep Kit</b>	Pellet-Free™ plasmid DNA purification in less than 10 minutes. Recover up to 25 µg DNA in as low as 30 µl.	50 100 400	<b>D4036</b> <b>D4019</b> <b>D4020</b>
<b>Zyppy™-96 Plasmid Miniprep</b>	The fastest and simplest high-throughput method for plasmid purification.	2 x 96 4 x 96 8 x 96	<b>D4041</b> <b>D4042</b> <b>D4043</b>
<b>Zyppy™ Plasmid Midiprep Kit</b>	Pellet-Free™ plasmid DNA purification in 15 minutes in a 150 µl minimum elution volume.	25 50	<b>D4025</b> <b>D4026</b>
<b>ZR Plasmid MiniPrep™-Classic</b>	Plasmid DNA purification in minutes: (alkaline lysis/spin column format for low 30 µl elution volume).	100 400 800	<b>D4015</b> <b>D4016</b> <b>D4054</b>
<b>Genomic DNA Purification</b>			
<b>Quick-gDNA™ MiniPrep</b>	Easy purification of genomic DNA from whole blood, plasma, serum, body fluids, buffy coat, lymphocytes, tissue, swabs or cultured cells in as little as 15 minutes <u>without</u> the use of Proteinase K or organic denaturants.	50 200 50 200	<b>D3006</b> (uncapped) <b>D3007</b> (uncapped) <b>D3024</b> (capped) <b>D3025</b> (capped)
<b>ZR-96 Quick-gDNA™</b>	Simple, high throughput purification of DNA from whole blood, plasma, serum, body fluids, buffy coat, lymphocytes, tissue, swabs, or cultured cells in about 30 minutes.	2 x 96 4 x 96 10 x 96	<b>D3010</b> <b>D3011</b> <b>D3012</b>
<b>ZR Genomic DNA™-Tissue MiniPrep</b>	For high quality DNA purification from <u>solid tissues</u> (e.g., tail snips, ear punches, adipose tissue, etc.), body fluids, cultured cells, buccal cells, FFPE tissues, hair, and other biological sources using Proteinase K and Fast.	50 200	<b>D3050</b> <b>D3051</b>
<b>Environmental DNA Purification Kits</b>	Unique BashingBead™ technology allows isolation of DNA from samples refractory to conventional lysis procedures including tough-to-lyse tissues, soil samples, feces, plants, seeds, insects, bacteria, yeast, filamentous fungi, unicellular and filamentous algae, and protozoa		<b>Visit website for a comprehensive list</b>

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