Innovation to support science....

ZYMO RESEARCH
The Beauty of Science is to Make Things Simple

INSTRUCTION MANUAL

Oligo Clean & Concentrator™

Catalog Nos. **D4060 & D4061**

Highlights

- Quick *(2 minute)* recovery of ultra-pure DNA and RNA oligonucleotides.
- Complete removal of dyes, salts, enzymes, nucleotides, and short oligos.
- ≥6 µl elution with zero retention *Fast Spin* columns.
- Eluted DNA/RNA is well suited for use in hybridization, sequencing, PCR, ligation, *etc*.

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ZYMO RESEARCH CORP.

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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

Oligo Clean & Concentrator™ (Kit Size)	D4060 (50 Preps.)	D4061 (200 Preps.)	Storage Temperature
Oligo Binding Buffer	10 ml	40 ml	Room Temp.
DNA Wash Buffer[1]	24 ml	48 ml	Room Temp.
Zymo-Spin™ IC Columns	50	200	Room Temp.
Collection Tubes	100	400	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.
(DNA Wash Buffer is compatible with DNA and RNA.)

Applications

Isotope and Dye Removal	Efficiently removes unincorporated fluorescent (*i.e.*, AMCA, FITC, BIO, DIG, Cy3, Cy5, FAM, *etc.*) and radiolabeled dNTP derivatives from DNA following *in vitro* labeling reactions.
DNA Fragment 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.*
Post-Reverse Transcription (RT) & cDNA Clean-up	Efficiently purifies DNA following RT, either as a DNA/RNA complex or as single stranded cDNA following chemical hydrolysis of the RNA template *(see page 3)*.

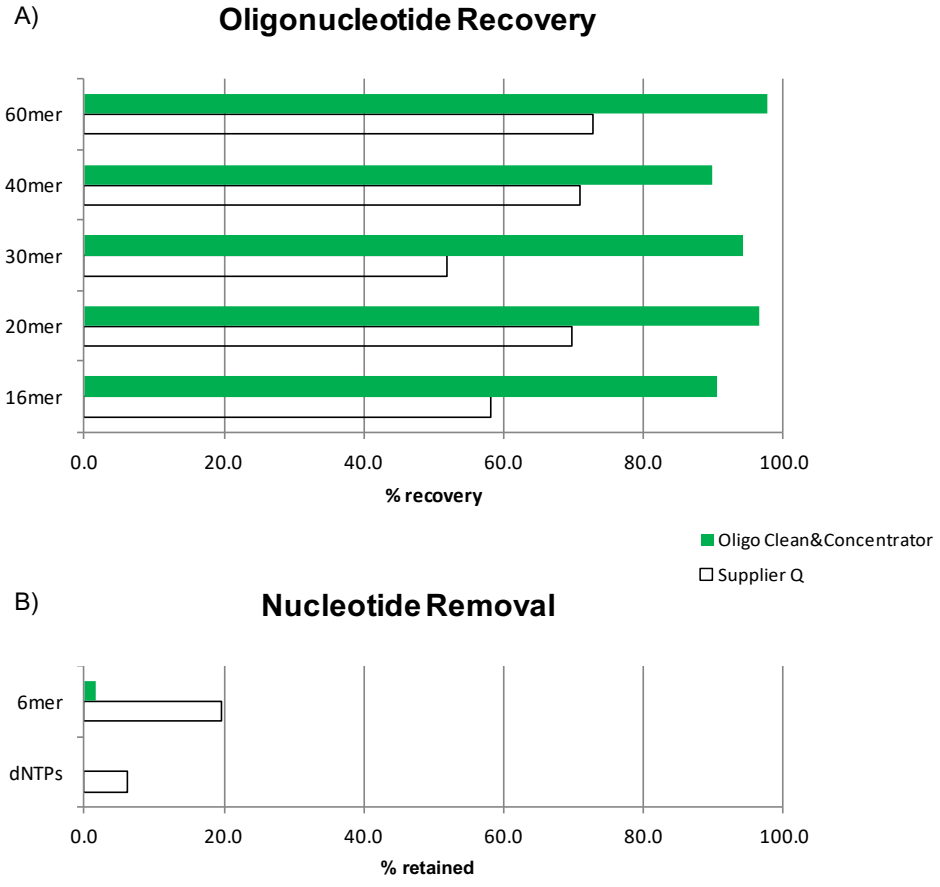
Specifications

- **Sample Sources** – Enzymatic reaction mixtures containing oligonucleotides ≥16 nt (radioactive-, biotin-, DIG-labeled, *etc.*).
- **Size Limits** – For oligonucleotides ≥16 nt, up to 23 kb.
- **Compatibility** – single-stranded (ss) and double-stranded (ds) DNA and RNA.
- **Recovery** – Binding capacity of the Zymo-Spin™ IC column is 10 µg of ssDNA/RNA or 5 µg of dsDNA with a typical recovery >90 %. The column can be eluted with ≥6 µl.
- **Purity** – High-quality DNA/RNA ($A_{260}/A_{280\ nm}$ >1.8; $A_{260}/A_{230\ nm}$ >1.8) eluted with water is especially well suited for hybridization, sequencing, ligation, and PCR.
- **Detergent Tolerance** – ≤5% Triton X-100, ≤5% Tween-20, ≤5% Sarkosyl, ≤0.1% SDS.

Product Description

The **Oligo Clean & Concentrator™** provides a streamlined method for efficient recovery and clean-up of DNA and RNA oligonucleotides ≥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* column technology and employs a single-buffer system that allows for efficient oligonucleotide adsorption to the matrix of **Zymo-Spin™ IC Column**. Oligonucleotide is washed and concentrated into a small volume of water (≥6 µl). Purified oligonucleotide, available in just 2 minutes, is suitable for hybridization, gel shift assays, enzymatic reactions, ligation, sequencing, microarray analysis, *etc.*



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

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

Buffer Preparation

Before starting, add 96 ml 100% ethanol (104 ml 95% ethanol) to the 24 ml **DNA Wash Buffer** concentrate (D4060) or 192 ml 100% ethanol (208 ml of 95% ethanol) to the 48 ml **DNA Wash Buffer** concentrate (D4061).

Protocol

1. Add 100 µl **Oligo Binding Buffer** to 50 µl sample[1].

2. Add 400 µl ethanol[2] (95-100%), mix briefly by pipetting and transfer the mixture to a provided **Zymo-Spin™ Column**[3] in a **Collection Tube**.

   Note: If required, scale up volumes proportionally.

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

   For radioactive samples: Transfer the column into a new collection tube then discard the tube containing the radioactive flow-through appropriately.

4. Add 750 µl **DNA Wash Buffer** to the column. Centrifuge at ≥10,000 x *g* for 30 seconds and discard the flow-through. Then centrifuge at maximum speed for 1 minute.

5. Transfer the column to a microcentrifuge tube. Add 15 µl water[4] directly to the column matrix and centrifuge at ≥10,000 x *g* for 30 seconds to elute the oligonucleotide.

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

Notes:

[1] Minimum recommended sample volume is 50 µl (adjust with water).

[2] For DNA/RNA ≥80 nt, only 200 µl ethanol are required.

[3] The column capacity is 800 µl. For larger samples, it may be necessary to load and spin a column multiple times.

[4] TE buffer can also be used for elution if required.

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 µl of RT reaction, add 10 µl 0.5 M EDTA followed by 10 µl 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
Oligo Clean & Concentrator™	D4060 D4061	50 Preps. 200 Preps.
ZR-96 Oligo Clean & Concentrator™	D4062 D4063	2x 96 Preps. 4x 96 Preps.

For Individual Sale	Catalog No.	Amount
Oligo Binding Buffer	D4060-1-10 D4060-1-40	10 ml 40 ml
DNA Wash Buffer (concentrate)	D4003-2-24 D4003-2-48	24 ml 48 ml
Zymo-Spin™ IC Columns	C1004-50 C1004-250	50 250
Collection Tubes	C1001-50 C1001-500 C1001-1000	50 500 1000

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Popular Products From Zymo Research

Product	Description	Kit Size (Preps.)	Catalog No. (Format)
	Fragment DNA Purification		
DNA Clean & Concentrator™-5	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	**D4003** (uncapped) **D4004** (uncapped) **D4013** (capped) **D4014** (capped)
DNA Clean & Concentrator™-25	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	**D4005** (uncapped) **D4006** (uncapped) **D4033** (capped) **D4034** (capped)
ZR-96 DNA Clean & Concentrator™-5	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	**D4023** **D4024**
Genomic DNA Clean & Concentrator™	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	**D4010** (capped) **D4011** (capped)
Zymoclean™ Gel DNA Recovery Kit	Purify DNA from high and low-melting agarose gels in minutes.	50 200 50 200	**D4001** (uncapped) **D4002** (uncapped) **D4007** (capped) **D4008** (capped)
ZR-96 Zymoclean™ Gel DNA Recovery Kit	High-throughput DNA purification from high and low-melting agarose gels.	2 x 96 4 x 96	**D4021** **D4022**
Zymoclean™ Large Fragment DNA Recovery Kit	Purify high molecular weight DNA (≤ 200 kb) from high and low-melting agarose gels in minutes.	25 100	**D4045** (capped) **D4046** (capped)
***OneStep*™ PCR Inhibitor Removal Kit**	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	**D6030** **D6035**
	Plasmid DNA Purification		
Zyppy™ Plasmid Miniprep Kit	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	**D4036** **D4019** **D4020**
Zyppy™-96 Plasmid Miniprep	The fastest and simplest high-throughput method for plasmid purification.	2 x 96 4 x 96 8 x 96	**D4041** **D4042** **D4043**
Zyppy™ Plasmid Midiprep Kit	Pellet-Free™ plasmid DNA purification in 15 minutes in a 150 µl minimum elution volume.	25 50	**D4025** **D4026**
ZR Plasmid MiniPrep™-*Classic*	Plasmid DNA purification in minutes: (alkaline lysis/spin column format for low 30 µl elution volume).	100 400 800	**D4015** **D4016** **D4054**
	Genomic DNA Purification		
***Quick-gDNA*™ MiniPrep**	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 without the use of Proteinase K or organic denaturants.	50 200 50 200	**D3006** (uncapped) **D3007** (uncapped) **D3024** (capped) **D3025** (capped)
ZR-96 *Quick-gDNA*™	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	**D3010** **D3011** **D3012**
ZR Genomic DNA™-Tissue MiniPrep	For high quality DNA purification from solid tissues (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	**D3050** **D3051**
Environmental DNA Purification Kits	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		**Visit website for a comprehensive list**

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