ZYMO RESEARCH

RNA Purification Made Simple™

Oligo Clean & Concentrator™

Clean-up DNA/RNA oligos from any reaction

Highlights

- Quick, 2-minute clean-up of ultra-pure DNA and RNA oligonucleotides.
- Complete removal of dyes, salts, enzymes, nucleotides and short oligos.
- Eluted DNA/RNA (≥ 6 µl) is ready for hybridization, sequencing, PCR, ligation, etc.

Catalog Numbers:
D4060, D4061

Scan with your smart-phone camera to view the online protocol/video.

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Product Contents

Oligo Clean & Concentrator™	D4060 (50 prep)	D4061 (200 prep)
Oligo Binding Buffer	10 ml	40 ml
DNA Wash Buffer (concentrate)[1]	24 ml	48 ml
Zymo-Spin™ IC Columns	50	200
Collection Tubes	100	400
Instruction Manual	1	1

Storage Temperature - Store all kit components (i.e., buffers, columns) at room temperature.
Before use:
1 Prior to use, 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).

Specifications

- **Sample Sources –** Enzymatic reactions mixtures containing oligonucleotides ≥ 16 nt (radioactive-, biotin-, DIG-labeled, etc.)
- **Size Limits –** For oligonucleotides ≥ 16 nt, up to 23 kb.
- **Purity –** A_{260}/A_{280} & A_{260}/A_{230} > 1.8. DNA/RNA is ready for hybridization, sequencing, ligation, PCR and etc.
- **Binding Capacity –** 10 µg ssDNA/RNA or 5 µg dsDNA with a typical recovery of > 90% (**Zymo-Spin™ IC Column**).
- **Elution Volume –** ≥ 6 µl (water not provided).
- **Detergent Tolerance –** ≤ 5% Triton X-100, ≤ 5% Tween-20, ≤ 5% Sarkosyl, ≤ 0.1% SDS.
- **Equipment Needed** (user provided) **–** Microcentrifuge.

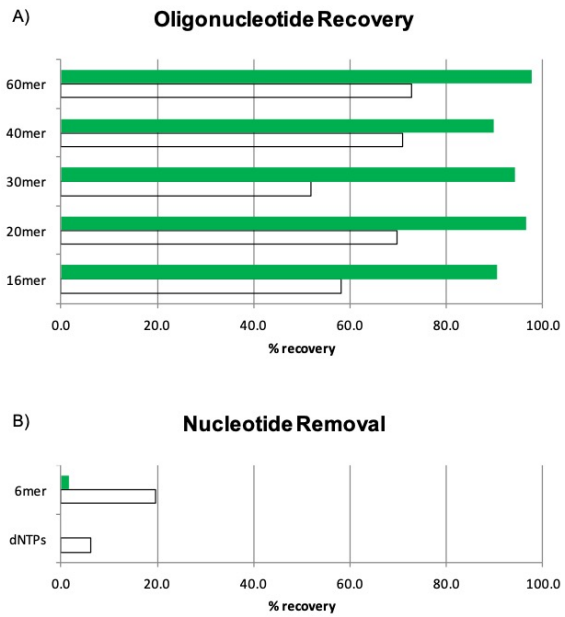
Applications

- **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 –** Desalting of DNA with the removal of DNA polymerases, modifying enzymes, RNA polymerases, ligases, kinases, nucleases, phosphatases, endonucleases, etc.
- **Post-Reverse Transcription (RT) and cDNA Clean-up –** Purifies DNA following RT, either as a DNA/RNA complex or as single stranded cDNA following chemical hydrolysis of the RNA template (page 6).

Product Description

The **Oligo Clean & Concentrator™** kit 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 Zymo-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*.



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

Protocol

The protocol consists of: (I) Buffer Preparation and (II) DNA/RNA Clean-Up

(I) Buffer Preparation

- ✓ Prior to use, 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).

(II) DNA/RNA Clean-up

- ✓ Perform all steps at room temperature and centrifugation at 10,000-16,000 x g for 30 seconds, unless specified.
- ✓ Scale up the volumes proportionally (steps 1-2), if needed.

1. Add 100 µl **Oligo Binding Buffer** to 50 µl sample[1].
2. Add 400 µl ethanol[2] (95-100%) and mix well by pipetting.
3. Transfer the sample to the **Zymo-Spin™ IC Column**[3] in a **Collection Tube** and centrifuge. Discard the flow-through[4].
4. Add 750 µl **DNA Wash Buffer** to the column and centrifuge for 1 minute ensure complete removal of the wash buffer. Carefully, transfer the column into a nuclease-free tube (not provided).
5. Add 15 µl water[5] directly to the column matrix and centrifuge.

   Alternatively, for highly concentrated DNA/RNA use ≥ 6 µl elution.

   The eluted oligonucleotide can be used immediately or stored frozen.

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1 To minimize pipetting error, adjust the sample volume to 50 µl (minimum).
2 For DNA/RNA ≥ 80 nt, only 200 µl ethanol is required.
3 To process samples >700 µl, **Zymo-Spin™** columns may be reloaded.
4 For **radioactive samples**, transfer the column into a new **Collection Tube** and discard the tube containing the radioactive flow-through appropriately.
5 Alternatively, TE buffer can be used for elution (if required).

Appendices

cDNA Clean-Up following Reverse Transcription (RT)

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** will neutralize the hydrolysis reaction and the recovered cDNA may be used directly for microarray analysis. etc.

Hydrolysis Reaction: To each 30-50 µl RT reaction, add 10 µl 0.5 M EDTA and 10 µl 1 M NaOH. Then mix and incubate at 65°C for 15 minutes. Proceed to the DNA/RNA Clean-Up protocol, page 5.

Ordering Information

Product Description	Catalog No.	Size
Oligo Clean & Concentrator™	D4060 D4061	50 preps. 200 preps.

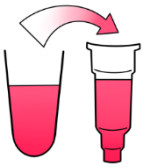
Individual Kit Components	Catalog No.	Amount
Oligo Binding Buffer	D4060-1-10 D4060-1-40	10 ml 40 ml
DNA Wash Buffer (concentrate)	D4003-2-24 D4003-2-48	24 ml 48 ml
Zymo-Spin™ IC Columns	C1004-50 C1004-250	50 250
Collection Tubes	C1001-50 C1001-500	50 500

Complete Your Workflow

✓ For tough-to-lyse samples in TRIzol, use ZR BashingBead Lysis Tubes:

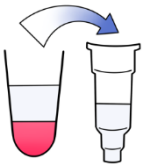
ZR BashingBead Lysis Tubes	
2.0 mm beads #S6003	For plant/animal tissue
0.1 + 0.5 mm beads #S6012	For microbes
0.1 + 2.0 mm beads #S6014	For microbes in tissue/insects

✓ The only **direct**, high-throughput and automatable RNA purification from sample lysates in TRIzol (DNase I Set included with all formats):



Direct-zol RNA kits	
Microprep #R2060-R2063	From 1 cell and up
Miniprep #R2050-R2053	Up to 50 ug RNA
Miniprep Plus #R2070-R2073	Up to 100 ug RNA
96-well #R2054-R2057	Spin-plate
MagBeads #R2100-R2105	Automatable (Tecan, Hamilton, Kingfisher, etc.)

✓ For RNA clean-up (purification) from the aqueous phase (e.g., TRIzol, TRI Reagent or similar) or from any enzymatic reaction (e.g., DNase I treated RNA):



RNA Clean & Concentrator kit	
#R1013-R1014	DNase I Set included

✓ For NGS:

Zymo-Seq RiboFree Total RNA Library Prep kit	
#R3000	12 preps
#R3003	96 preps

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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.

This product is for research use only and should only be used by trained professionals. It is not 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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