ZYMO RESEARCH

RNA Purification Made Simple™

ssDNA/RNA Clean & Concentrator™

Clean-up ssDNA/RNA from any sample

Highlights

- Quick, 10-minute method for separating, cleaning and concentrating single-stranded DNA or RNA.
- Ideal for non-enzymatic elimination of genomic DNA and purification of transcripts, probes, primers, etc.
- Ultra-pure ssDNA/RNA eluted in ≥ 6 µl and ready for all downstream applications.

Catalog Numbers:
D7010, D7011

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

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Product Contents

ssDNA/RNA Clean & Concentrator™	D7010 (20 prep)	D7011 (50 prep)
DNA/RNA Binding Buffer	10 ml	25 ml
DNA/RNA Prep Buffer	10 ml	25 ml
DNA/RNA Wash Buffer (concentrate)	6 ml	12 ml
DNase/RNase-Free Water	1 ml	1 ml
Zymo-Spin™ IC Columns	20	50
Zymo-Spin™ IICR Columns	20	50
Collection Tubes	40	100
Instruction Manual	1	1

Storage Temperature - Store all kit components (i.e., buffers, columns) at room temperature.
Before use:
1 Before starting, add 24 ml 100% ethanol (26 ml of 95% ethanol) to the 6 ml **DNA/RNA Wash Buffer** concentrate (D7010) or 48 ml 100% ethanol (52 ml of 95% ethanol) to the 12 ml **DNA/RNA Wash Buffer** concentrate (D7011).

Specifications

- **Sample Sources –** Mixtures of double and single stranded DNA and RNA species with single stranded fragments 17 to 200 nucleotides (e.g., short transcripts, probes, primers, etc.).
- **Purity –** A_{260}/A_{280} & A_{260}/A_{230} > 1.8. DNA/RNA is ready for all downstream manipulations.
- **Binding Capacity –** 10 µg ssDNA/RNA (**Zymo-Spin™ IC Column**).
- **Elution Volume –** ≥ 6 µl **DNase/RNase-Free Water**.
- **Equipment Needed** (user provided) **–** Microcentrifuge.

Product Description

The **ssDNA/RNA Clean & Concentrator™** kit provides a 10-minute, reliable method for the rapid separation, clean-up and concentration of up to 5 µg (per prep) of single stranded DNA and/or RNA from double stranded species (e.g., genomic DNA).

This simple procedure is based on the use of a unique single-buffer system and **Zymo-Spin™ Column** technology. Single stranded DNA or RNA (17 to 200 nucleotides; e.g., short transcripts, probes, primers) can be safely treated and recovered using this kit. The result is highly-concentrated (≥ 6 µl), purified DNA/RNA that is suitable for subsequent molecular methods including PCR, RT/PCR, hybridization, etc.

Protocol

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

(I) Buffer Preparation

- ✓ Before starting, add 24 ml 100% ethanol (26 ml of 95% ethanol) to the 6 ml **DNA/RNA Wash Buffer** concentrate (D7010) or 48 ml 100% ethanol (52 ml of 95% ethanol) to the 12 ml **DNA/RNA Wash Buffer** concentrate (D7011).

(II) ssDNA/RNA Clean-up

- ✓ Perform all steps at room temperature and centrifugation at 10,000-16,000 x g for 30 seconds, unless specified.
- ✓ Optional: DNase I treatment (before clean-up) can be performed (see page 6).

1. Add 2 volumes **DNA/RNA Binding Buffer** to each sample[1] and mix.

   Example: Mix 100 µl buffer and 50 µl sample.

2. Transfer the sample to the **Zymo-Spin™ IICR Column**[2] in a **Collection Tube** and centrifuge. Save the flow-through!

3. To the flow-through, add an equal volume of ethanol (95-100%) (1:1) and mix.

   Example: Add 150 µl ethanol to 150 µl flow-through.

4. Transfer the mixture to the **Zymo-Spin™ IC Column**[2] in a **Collection Tube** and centrifuge. Discard the flow-through.

   Optional: At this point, in-column DNase I treatment can be performed (see page 6).

5. Add 400 µl **DNA/RNA Prep Buffer** to the column and centrifuge. Discard the flow-through.

6. Add 700 µl **DNA/RNA Wash Buffer** to the column and centrifuge. Discard the flow-through.

7. Add 400 µl **DNA/RNA 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).

8. Add 15 µl **DNase/RNase-Free Water** directly to the column matrix and centrifuge.

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

   The eluted DNA/RNA 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 To process samples > 700 µl, **Zymo-Spin™** columns may be reloaded.

Appendices

DNase I Treatment (optional)

- ✓ DNase I treatment (optional) can be performed with DNase I Set (cat. no. E1010) and DNA/RNA Wash Buffer (concentrate) (cat. no. D7010-2-6); materials sold separately.
- ✓ Perform all steps at room temperature and centrifugation at 10,000-16,000 x g for 30 seconds, unless specified.

DNase I treatment before DNA/RNA clean-up (Recommended)

For each sample to be treated, prepare 50 µl **DNase I Reaction Mix** in a nuclease-free tube (not provided) and mix by gentle inversion. Then incubate at room temperature (20-30°C) for 15 minutes and proceed with the ssDNA/RNA Clean-up protocol, page 5.

DNase I Reaction Mix	
Sample (≤ 10 µg; volume adjusted with water or TE buffer)	40 µl
DNase I (reconstituted; 1 U/ul)[1]	5 µl
DNA Digestion Buffer	5 µl

In-column DNase I treatment

1. Following ssDNA/RNA binding step (page 5, step 4), add 400 µl **DNA/RNA Wash Buffer** to the column, centrifuge and discard the flow-through.
2. For each sample to be treated, prepare **DNase I Reaction Mix** in a nuclease-free tube (not provided) and mix by gentle inversion. Then add 40 µl directly into column matrix and incubate at room temperature (20-30°C) for 15 minutes. Proceed with the ssDNA/RNA Clean-up protocol (page 5, step 5).

DNase I Reaction Mix (in-column)	
DNase I (reconstituted; 1 U/ul)[1]	5 µl
DNA Digestion Buffer	35 µl

1 Unit definition – one unit increases the absorbance of a high molecular weight DNA solution at a rate of 0.001 A260 units/ml of reaction mixture at 25°C.
2 To minimize pipetting error, adjust the sample volume to 50 µl (minimum).

Ordering Information

Product Description	Catalog No.	Size
ssDNA/RNA Clean & Concentrator™	D7010 D7011	20 preps. 50 preps.

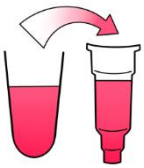
Individual Kit Components	Catalog No.	Amount
DNA/RNA Binding Buffer	D7010-1-10 D7010-1-25	10 ml 25 ml
DNA/RNA Prep Buffer	D7010-2-10 D7010-2-25	10 ml 25 ml
DNA/RNA Wash Buffer (concentrate)	D7010-3-6 D7010-3-12	6 ml 12 ml
Zymo-Spin™ IC Columns	C1004-50	50
Zymo-Spin™ IICR Columns	C1078-50	50
Collection Tubes	C1001-50	50
DNase/RNase-Free Water	W1001-1 W1001-4	1 ml 4 ml
DNase I Set (250 U DNase I (lyophilized) supplied with DNA Digestion Buffer, 4 ml)	E1010	1 set

Complete Your Workflow

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

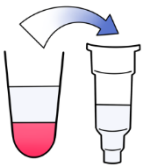
ZR BashingBead Lysis Tubes	
2.0 mm beads #S6003	For plant/animal tissue
0.1 + 0.5 mm beads #S6012	For microbes
0.1 + 2.0 mm beads #S6014	For microbes in tissue/insects

✓ 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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Zymo Research is committed to simplifying your research with quality products and services. If you are dissatisfied with this product for any reason, please call 1(888) 882-9682.

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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