ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

INSTRUCTION MANUAL

ZR Genomic DNA™-Tissue MidiPrep

Catalog No. **D3110**

Highlights

- For high quality DNA purification from solid tissues (e.g., tailsnips, earpunches, adipose tissue, etc.), whole blood, plasma, serum, buffy coat, lymphocytes, cultured cells, FFPE tissues, semen, hair, and other biological sources. Up to 125 µg/prep.
- Combines Proteinase K digestion with innovative *Fast-Spin* column purification technology.
- Isolated DNA is ideal for PCR, endonuclease digestion, Southern blotting, bisulfite conversion/methylation detection, sequencing, genotyping, etc.

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ZYMO RESEARCH CORP.

Phone: (949) 679-1190 ▪ Toll Free: (888) 882-9682 ▪ Fax: (949) 266-9452 ▪ info@zymoresearch.com ▪ www.zymoresearch.com

Satisfaction of all Zymo Research products is guaranteed. If you are not satisfied with this product please call 1-888-882-9682.

Product Contents

ZR Genomic DNA™-Tissue MidiPrep (Kit Size)	D3110 (25 Preps.)	Storage Temperature
Proteinase K & Storage Buffer*	1 x 20 mg	−20°C (after mixing)
2X Digestion Buffer**	20 ml	Room Temp.
Genomic Lysis Buffer***	100 ml	Room Temp.
DNA Pre-Wash Buffer**	15 ml	Room Temp.
g-DNA Wash Buffer	50 ml	Room Temp.
DNA Elution Buffer	16 ml	Room Temp.
Zymo-Spin™ V-E Columns w/ Zymo-Midi Filters™	25	Room Temp.
Collection Tubes	50	Room Temp.
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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 maximal performance and reliability.

* The Proteinase K is stable as shipped. Add 1,040 µl **Proteinase K Storage Buffer** to the **Proteinase K** tube prior to use. The final concentration of **Proteinase K** after the addition of **Proteinase K Storage Buffer** is ~20 mg/ml.

** The **2X Digestion Buffer** and **DNA Pre-Wash Buffer** may have formed a precipitate. If this is the case, incubate at 37°C to solubilize.

*** *Recommended*: Add beta-mercaptoethanol to 0.5%(v/v) i.e., 500 µl per 100 ml.

Specifications

- **Sample Sources** – Solid tissues (e.g., tailsnips, earpunches, adipose tissue, etc.), whole blood, plasma, serum, buffy coat, lymphocytes, cultured cells, FFPE tissues, semen, hair, and other biological sources are effectively processed using this kit.
- **DNA Purity** – High quality DNA for PCR, endonuclease digestion, Southern blotting, bisulfite conversion/methylation detection, sequencing, genotyping, etc., is eluted with **DNA Elution Buffer** or water. (A_{260}/A_{280} ≥1.8)
- **DNA Size** – Capable of recovering genomic and mitochondrial DNA sized fragments from 100 bp to ≥40 kb. If present, parasitic, microbial, and viral DNA will also be recovered. Typical fragment sizes range from 25 kb-35 kb.
- **DNA Yield** – The DNA binding capacity of the column is 125 µg. Typically, mammalian tissues yield: 1-3 µg DNA per mg skeletal, heart, and brain tissues and 3-5 µg DNA per mg liver, kidney and lung tissues. Human whole blood will yield 3-7 µg DNA per 100 µl blood sampled. DNA is eluted into ≥150 µl DNA Elution Buffer or water**.**
- **Product Detergent Tolerance** – ≤5% Triton X-100, ≤5% Tween-20, ≤5% Sarkosyl, ≤0.1% SDS.
- **Equipment** – Water bath or heat block (55°C), centrifuge or vacumm source and manifold, microcentrifuge, and vortex

For purification of up to 25 µg DNA/prep, use the **ZR Genomic DNA™-Tissue MiniPrep** (D3050, D3051). For high throughput purification (96-well), use the **ZR-96 Genomic DNA™-Tissue Miniprep** (D3055, D3056, D3057).

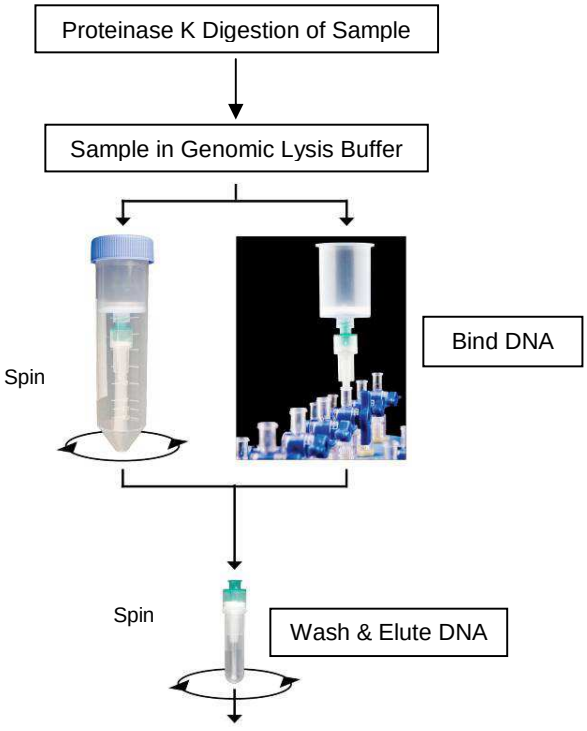
Note - ™ Trademarks of Zymo Research Corporation. This product is for research use only and should only be used by trained professionals. It is not intended for use in diagnostic procedures. Some reagents included with this kit are irritants. Wear protective gloves and eye protection. Follow the safety guidelines and rules enacted by your research institution or facility.

Product Description

The **ZR Genomic DNA™-Tissue MidiPrep** is a straightforward procedure for the rapid isolation of total DNA (e.g., genomic, mitochondrial, parasitic, microbial, viral) from a variety of solid tissues that are either fresh, frozen, or FFPE. This product has been optimized for maximal recovery of ultra-pure DNA without RNA contamination and is also compatible with buffy coat, bone marrow, cells from culture, whole blood (fresh or stored), serum, plasma, and many biological liquid samples. For processing, simply digest the sample with the supplied **Proteinase K** then add the **Genomic Lysis Buffer**, vortex, and transfer the mixture to the supplied Zymo-Spin™ column/filter assembly. PCR inhibitors are effectively removed during the purification process and purified DNA is suitable for downstream applications including: PCR, Southern blotting, DNA sequencing, endonuclease digestion, bisulfite conversion/methylation analysis, etc.

Zymo-Spin™ V-E Column w/ Zymo-Midi Filter™

Zymo-Spin™ V-E Column

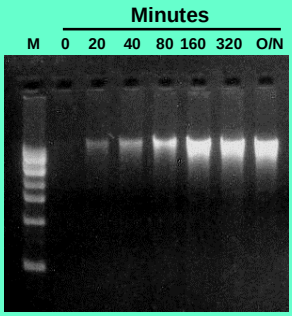


Zymo Research offers the following for rapid, precise DNA methylation detection…

1.) **EZ DNA Methylation™ Kit** (D5001, D5002, D5003)

2.) **EZ DNA Methylation-Gold™ Kit** (D5005, D5006, D5007, D5008)

3.) **EZ DNA Methylation-Direct™ Kit** (D5020, D5021, D5022, D5023)



High yield/quality DNA is successfully isolated from porcine muscle using the **ZR Genomic DNA™-Tissue MiniPrep**. Equivalent amounts (25 mg) of muscle tissue were processed using the **ZR Genomic DNA™-Tissue MiniPrep** after incubation with Proteinase K at 55°C for the indicated times (in minutes) or overnight (O/N). Equal volumes of eluted DNA were then analyzed in a 0.8% (w/v) TAE/agarose/ethidium bromide gel. The size marker "M" is a 1 kb ladder (Zymo Research).

Please visit: **www.zymoresearch.com** for a comprehensive list of genomic DNA purification products.

General Considerations When Purifying Genomic DNA

Zymo Research offers a range of genomic DNA isolation kits that are suitable for extracting high molecular weight DNA from a wide variety of sample types. Kits are tailor-made for specific applications and feature chemical, Proteinase K, and/or mechanical lysis technologies depending on the starting material (see table below).

DNA Extraction Method	Applications
Chemical	*Soft tissue samples* from humans, mice, etc., including: whole blood, plasma, serum, cells, buffy coat, buccal cells, biological liquids, crude homogenates, etc.
Proteinase K & Chemical	*Solid tissue samples* from humans, mice, etc., including: tailsnips, earpunches, hair*, feathers*, and FFPE* samples, as well as all of the above.
Mechanical Homogenization & Chemical	*Tough tissues and organisms* including: insects, arthropods, fungi, gram (+/-) bacteria, and microorganisms in soil, sludge, feces, or water, as well as most of the above.

The **ZR Genomic DNA™-Tissue MidiPrep** includes Proteinase K digestion and chemical lysis for the rapid, efficient purification of DNA (up to 125 µg/prep.) from soft and solid tissues, cells, and a range of biological liquids (see table below for sample types and protocol recommendations).

Recommended Protocol	Sample Types
Solid Tissue	*Solid tissue samples* from humans, mice, etc., including: tailsnips, earpunches, hair*, feathers*, and FFPE* samples. **(pg. 4)**
Whole Blood, Serum, and Plasma	Whole blood, plasma, and serum. **(pg. 5)**
Cell Monolayer	Monolayer cells (≤25 x10^6) from culture**. (pgs. 6)**
Biological Liquids and Cell Suspensions	Biological liquids including: semen, CSF, buffy coat, body fluids. Cell suspensions containing less than 25x10^6 cells (e.g., buffy coat, suspension cultured cells, etc.) **(pg. 7)**

* With protocol modification. See Alternative Protocols **(pg. 8.)**

Starting Material: The quality of the sampled material will affect both the yield and quality of the purified DNA. Freshly sampled tissues and cells yield the highest quantity/quality DNA. If sampling from "stored" sources and/or if samples have been subject to repeated freeze/thawing, yields may decrease and the purified DNA may be degraded (e.g., FFPE).

The **ZR Soil Microbe DNA MidiPrep™** (D6101), **ZR Fecal DNA MidiPrep™** (D6110), and **ZR Plant/Seed DNA MidiPrep™** (D6120) can be used for the purification of inhibitor-free DNA from soil, feces, and plants, respectively.

Removal of PCR Inhibitors: The **ZR Genomic DNA™-Tissue MidiPrep** has been designed for the efficient removal of PCR inhibitors during DNA purification from the samples listed in the tables above. However, some environmental samples including soil, plants, and manure (feces) will require alternative technologies (see sidebar) for the effective removal of polyphenolic PCR inhibitors.

Storage of Purified DNA: The eluted DNA can be used immediately for molecular-based applications or stored ≤-20ºC.

Reagent Preparation

- ✓ Add 1,040 µl **Proteinase K Storage Buffer** to the 20 mg **Proteinase K** tube prior to use. The final concentration of Proteinase K after the addition of Proteinase K Storage Buffer is ~20 mg/ml.
- ✓ *Recommended*: Add beta-mercaptoethanol (user supplied) to the **Genomic Lysis Buffer** to a final dilution of 0.5%(v/v) i.e., 500 µl per 100 ml.

Protocols

Solid Tissue – Including: tailsnips, earpunches, biopsies, etc.

The following is for the purification of DNA from up to 125 mg fresh or frozen tissue. Typical yields are: 1-3 µg DNA per mg skeletal, heart, and brain tissues and 3-5 µg DNA per mg liver, kidney, and lung tissues. For hair, feathers and FFPE tissues follow **Alternative Protocols I** and **II** on page 8, respectively.

1. To a tissue sample (≤125 mg) in a 15 ml centrifuge tube and add a solution of...

H_2O	475 µl
2X Digestion Buffer	475 µl
Proteinase K	40 µl

2. Mix and then incubate the tube at 55°C for 1-3 hours[1].

   Note: If required (e.g., FFPE samples), digesting samples overnight at 55°C with Proteinase K is possible without affecting the integrity of the DNA.

3. Add 4 ml **Genomic Lysis Buffer** to the tube and mix thoroughly by vortexing.

4. Transfer the mixture to a **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly in a 50 ml tube[2]. Centrifuge the tube at ≥1,000 *x g* (2,000 x *g* max.) for 5 minutes[3].

5. Disconnect the **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly and transfer the **Zymo-Spin™ V-E Column** to a **Collection Tube**. Spin at 10,000 x *g* for 1 minute in a microcentrifuge[4] to remove residue from the column.

6. Add 300 µl **DNA Pre-Wash Buffer** to the column and spin at 10,000 x *g* for 1 minute. Discard the flow through.

7. Add 400 µl of **g-DNA Wash Buffer** to the column and centrifuge at 10,000 *x g* for 1 minute. Discard flow through and repeat wash step.

8. Transfer the **Zymo-Spin™ V-E Column** to a 1.5 ml microcentrifuge tube and add 150 µl **DNA Elution Buffer** directly to the column matrix[5] and allow column to stand for 1 minute at room temperature. Centrifuge at 10,000 x *g* for 1 minute to elute the DNA[6]. The eluted DNA can be used immediately for molecular based applications or stored ≤-20 C for future use.

For **Technical Assistance**, please contact 1-888-882-9682 or E-mail tech@zymoresearch.com.

Notes:

[1] Incubate 12-16 hours for formalin-fixed deparaffinized samples.

[2] *Caution*: Make sure the connection between the column and filter is secure (finger tight) prior to centrifugation.

[3] Alternatively, the **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly can be mounted on a vacuum manifold with a vacuum source set at ≥500 mm Hg.

[4] Leave the rotor cover off the microcentrifuge if clearance with the column tops is a problem.

[5] Elution of DNA from the column is dependent on pH and temperature. If water is used, ensure the pH is >6.0. Also, the total yield may be improved by eluting the DNA with Elution Buffer or water pre-equilibrated to 60-70°C.

[6] DNA yields can be increased by performing a second elution and pooling the eluates.

Whole Blood, Serum and Plasma

Human whole blood should yield between 3-7 µg DNA per 100 µl.

The following is for the purification of DNA from up to 500 µl whole blood, serum or plasma (the volumes can be adjusted depending on your requirements). Fresh, frozen, or preserved blood (in EDTA, citrate, or heparin) can be used.

1. Adjust total volume of sample (blood, serum, or plasma) to 500 µl with water in a 15 ml centrifuge tube and then add the following...

2X Digestion Buffer	475 µl
Proteinase K	25 µl

   Example: Add 200 µl H_2O to 300 µl blood, serum, or plasma prior to adding the 2X Digestion Buffer and Proteinase K.

2. Mix and then incubate the tube at 55°C for 20 minutes.

3. Add 4 ml **Genomic Lysis Buffer** to the tube and mix thoroughly by vortexing.

4. Transfer the mixture to a **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly in a 50 ml tube[1]. Centrifuge the tube at ≥1,000 *x g* (2,000 x *g* max.) for 5 minutes[2].

5. Disconnect the **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly and transfer the **Zymo-Spin™ V-E Column** to a **Collection Tube**. Spin at 10,000 x *g* for 1 minute in a microcentrifuge[3] to remove residue from the column.

6. Add 300 µl **DNA Pre-Wash Buffer** to the column and spin at 10,000 x *g* for 1 minute. Discard the flow through.

7. Add 400 µl of **g-DNA Wash Buffer** to the column and centrifuge at 10,000 *x g* for 1 minute. Discard flow through and repeat wash step.

8. Transfer the **Zymo-Spin™ V-E Column** to a 1.5 ml microcentrifuge tube and add 150 µl **DNA Elution Buffer** directly to the column matrix[4] and allow column to stand for 1 minute at room temperature. Centrifuge at 10,000 x *g* for 1 minute to elute the DNA[5]. The eluted DNA can be used immediately for molecular based applications or stored ≤-20 C for future use.

Notes:

[1] *Caution*: Make sure the connection between the column and filter is secure (finger tight) prior to centrifugation.

[2] Alternatively, the **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly can be mounted on a vacuum manifold with a vacuum source set at ≥500 mm Hg.

[3] Leave the rotor cover off the microcentrifuge if clearance with the column tops is a problem.

[4] Elution of DNA from the column is dependent on pH and temperature. If water is used, ensure the pH is >6.0. Also, the total yield may be improved by eluting the DNA with Elution Buffer or water pre-equilibrated to 60-70°C.

[5] DNA yields can be increased by performing a second elution and pooling the eluates.

Cell Monolayer

The following procedure is designed for up to $25x10^6$ monolayer cells. Although cell types and culture conditions may vary, the protocol will work with high-density growth cells (e.g., HeLa cells) as well as with low-density growth cells (e.g., neuronal cells). The table (below) is provided as a reference for estimating cell numbers.

Generally, no more than $25x10^6$ cells should be sampled, for larger samples will exceed the binding capacity of the spin column.

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1. Trypsinize or scrape adherent cells from a culture flask or plate. Centrifuge the suspension at approximately 500 x *g* for 5 minutes. Remove the supernatant and resuspend the cell pellet in 5 ml PBS (Phosphate Buffered Saline) and then transfer suspension to a centrifuge tube. Centrifuge the suspension at approximately 500 x *g* for 5 minutes. Remove the supernatant and resuspend the pellet in a solution of…

H_2O	475 µl
2X Digestion Buffer	475 µl
Proteinase K	25 µl

2. Incubate the tube at 55°C for 20 minutes.

3. Add 4 ml **Genomic Lysis Buffer** to the tube and mix thoroughly by vortexing.

4. Transfer the mixture to a **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly in a 50 ml tube[1]. Centrifuge the tube at ≥1,000 *x g* (2,000 x *g* max.) for two minutes 2 minutes[2].

5. Disconnect the **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly and transfer the **Zymo-Spin™ V-E Column** to a **Collection Tube**. Spin at 10,000 x *g* for 1 minute in a microcentrifuge[3] to remove residue from the column.

6. Add 300 µl **DNA Pre-Wash Buffer** to the column and spin at 10,000 x *g* for 1 minute. Discard the flow through.

7. Add 400 µl of **g-DNA Wash Buffer** to the column and centrifuge at 10,000 *x g* for one minute. Discard flow through and repeat wash step.

8. Transfer the **Zymo-Spin™ V-E Column** to a 1.5 ml microcentrifuge tube and add 150 µl **DNA Elution Buffer** directly to the column matrix[4] and allow column to stand for 1 minute at room temperature. Centrifuge at 10,000 x *g* for 1 minute to elute the DNA[5]. The eluted DNA can be used immediately for molecular based applications or stored ≤-20 C for future use.

Guidelines for Monolayer Cell DNA Isolation: Cell numbers (growth densities) can vary between different cell types. The table (below) provides an approximation of the cell numbers that can be recovered from different culture containers for "high-density" growth cells like CV1 and HeLa cells.

Culture Plate/Flask Growth Area (cm^2) and Cell Number

Culture Container	Well/Flask Surface Area	Cell Number
96-well plate	0.32-0.6 cm^2	$4-5x10^4$
24-well plate	2 cm^2	$1-3x10^5$
12-well plate	4 cm^2	$4-5x10^5$
6-well plate	9.5 cm^2	$0.5-1x10^6$
T25 Culture Flask	25 cm^2	$2-3x10^6$
T75 Culture Flask	75 cm^2	$0.6-1x10^7$
T175 Culture Flask	175 cm^2	$2-3x10^7$

Notes:

[1] *Caution*: Make sure the connection between the column and filter is secure (finger tight) prior to centrifugation.

[2] Alternatively, the **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly can be mounted on a vacuum manifold with a vacuum source set at ≥500 mm Hg.

[3] Leave the rotor cover off the microcentrifuge if clearance with the column tops is a problem.

[4] Elution of DNA from the column is dependent on pH and temperature. If water is used, ensure the pH is >6.0. Also, the total yield may be improved by eluting the DNA with Elution Buffer or water pre-equilibrated to 60-70°C.

[5] DNA yields can be increased by performing a second elution and pooling the eluates.

Biological Liquids and Cell Suspensions

Cells should be processed directly from biological fluids or from suspension in PBS, TE, or compatible buffers.

The following protocol is designed for up to 500 µl of biological liquid sample including semen, CSF, buffy coat, body fluids, and cell suspensions containing less than $25x10^6$ cells.

1. Adjust total volume of liquid sample to 500 µl with water in a microcentrifuge tube and then add the following...

2X Digestion Buffer	475 µl
Proteinase K	25 µl

2. Mix and then incubate the tube at 55°C for 20 minutes.
3. Add 4 ml **Genomic Lysis Buffer** to the tube and mix thoroughly by vortexing.
4. Transfer the mixture to a **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly in a 50 ml tube1. Centrifuge the tube at ≥1,000 *x g* (2,000 x *g* max.) for 2 minutes[2].
5. Disconnect the **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly and transfer the **Zymo-Spin™ V-E Column** to a **Collection Tube**. Spin at 10,000 x *g* for 1 minute in a microcentrifuge[3] to remove residue from the column.
6. Add 300 µl **DNA Pre-Wash Buffer** to the column and spin at 10,000 x *g* for 1 minute. Discard the flow through.
7. Add 400 µl of **g-DNA Wash Buffer** to the column and centrifuge at 10,000 *x g* for one minute. Discard flow through and repeat wash step.
8. Transfer the **Zymo-Spin™ V-E Column** to a 1.5 ml microcentrifuge tube and add 150 µl **DNA Elution Buffer** directly to the column matrix[4] and allow column to stand for 1 minute at room temperature. Centrifuge at 10,000 x *g* for 1 minute to elute the DNA[5]. The eluted DNA can be used immediately for molecular based applications or stored ≤-20 C for future use.

Notes:

[1] *Caution*: Make sure the connection between the column and filter is secure (finger tight) prior to centrifugation.

[2] Alternatively, the **Zymo-Spin™ V-E Column/Zymo-Midi Filter™** assembly can be mounted on a vacuum manifold with a vacuum source set at ≥500 mm Hg.

[3] Leave the rotor cover off the microcentrifuge if clearance with the column tops is a problem.

[4] Elution of DNA from the column is dependent on pH and temperature. If water is used, ensure the pH is >6.0. Also, the total yield may be improved by eluting the DNA with Elution Buffer or water pre-equilibrated to 60-70°C.

[5] DNA yields can be increased by performing a second elution and pooling the eluates.

Alternative Protocols:

I.) For Hair, Feathers, or Related Samples: Freshly prepared DTT (dithiolthreitol) (not provided) needs to be added to Step 1 of the Solid Tissue Protocol (page 3) as follows…

H_2O	450 µl
2x Digestion Buffer	450 µl
DTT (1 M)	50 µl
Proteinase K	40 µl

Then follow with the rest of the procedure as indicated.

II.) For FFPE Samples: Tissues need to be deparaffinized prior to Step 1 of the Solid Tissue Protocol (page 3) by…

i. Removing (trimming) as much paraffin from the sample(s) as possible.
ii. Transfer samples to centrifuge tubes. Add 3.75 ml xylene (not provided) to the samples.
iii. Vortex and incubate samples at room temperature for 1 hour with gentle rocking.
iv. Centrifuge for 5 minutes at 2,000 *x g* and remove the xylene from the sample. Repeat steps 2-4.
v. Wash two times with 5 ml EtOH (100%) for 5 minutes with gentle rocking.
vi. Wash two times with 5 ml EtOH (95%) for 5 minutes with gentle rocking.
vii. Wash two times with 5 ml EtOH (75%) for 5 minutes with gentle rocking.
viii. Wash once with 5 ml ddH_2O for 5 minutes with gentle rocking. Remove as much water from the sample as possible
ix. Use sample or store at -80°C.

Note: For steps v-viii, add the wash, vortex briefly, and incubate for 5 minutes with gentle rocking. Remove wash from the sample after centrifugation at 2,000 *x g* for 5 minutes.

Troubleshooting:

1. *DNA degradation*: Check for DNase contamination. All reagents and components supplied with the **ZR Genomic DNA™-Tissue MidiPrep** are DNase-free. However, DNase contamination can result during the processing of some samples. Check pipets, pipet tips, microcentrifuge tubes, etc., and exercise the appropriate precautions during the DNA purification procedure. Make sure Proteinase K digestions are performed at 55°C as indicated.

2. *DNA is not performing well in subsequent experiments*: Ensure the correct volume of **Genomic Lysis Buffer** has been added to the sample. Also, make sure all centrifugation steps are completed for the indicated times and speeds (rcfs). Failure to do so may result in incomplete washing, which may cause salts to be eluted with the DNA affecting quantitation and subsequent experiments including enzymatic processes like PCR.

3. *RNA contamination*: The buffers and spin columns provided in this kit are designed to efficiently remove RNA during the DNA purification procedure. However, additional RNA removal (e.g., digestion with RNase A) may be necessary for subsequent applications sensitive to trace amounts of RNA.

Ordering Information

Product Description	Catalog No.	Kit Size
ZR Genomic DNA™-Tissue MicroPrep	D3040 D3041	50 preps. 200 preps.
ZR Genomic DNA™-Tissue MiniPrep	D3050 D3051	50 preps. 200 preps.
ZR Genomic DNA™-Tissue MidiPrep	D3110	25 preps.
ZR-96 Genomic DNA™-Tissue MiniPrep	D3055 D3056 D3057	2x96 preps. 4x96 preps. 10x96 preps.

For Individual Sale	Catalog No.	Amount
Proteinase K & Storage Buffer	D3001-2-5 D3001-2-20	5 mg set 20 mg set
2X Digestion Buffer	D3050-1-5 D3050-1-20	5 ml 20 ml
Genomic Lysis Buffer	D3004-1-50 D3004-1-100	50 ml 100 ml
DNA Pre-Wash Buffer	D3004-5-15 D3004-5-30 D3004-5-50	15 ml 30 ml 50 ml
g-DNA Wash Buffer	D3004-2-50 D3004-2-100	50 ml 100 ml
DNA Elution Buffer	D3004-4-4 D3004-4-10 D3004-4-50	4 ml 10 ml 50 ml
Zymo-Spin™ V-E Columns w/ Zymo-Midi Filters	C1021-25	25 columns/filters
Collection Tubes	C1001-50 C1001-500 C1001-1000	50 tubes 500 tubes 1,000 tubes

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**
Environmental DNA Isolation			
ZR Soil Microbe DNA MicroPrep™ **ZR Soil Microbe DNA MiniPrep™** **ZR Soil Microbe DNA MidiPrep™** **ZR-96 Soil Microbe DNA Kit™**	Bead Bashing, Spin Column Format (up to 5 µg/prep.) Bead Bashing, Spin Column Format (up to 25 µg/prep.) Bead Bashing, Spin Column Format (up to 125 µg/prep.) Bead Bashing, 96-Well Format (up to 5 µg/well)	50 preps. 50 preps. 25 preps. 2x96 preps.	**D6003** **D6001** **D6101** **D6002**
ZR Fungal/Bacterial DNA MicroPrep™ **ZR Fungal/Bacterial DNA MiniPrep™** **ZR Fungal/Bacterial DNA MidiPrep™** **ZR-96 Fungal/Bacterial DNA Kit™**	Bead Bashing, Spin Column Format (up to 5 µg/prep.) Bead Bashing, Spin Column Format (up to 25 µg/prep.) Bead Bashing, Spin Column Format (up to 125 µg/prep.) Bead Bashing, 96-Well Format (up to 5 µg/well)	50 preps. 50 preps. 25 preps. 2x96 preps.	**D6007** **D6005** **D6105** **D6006**
ZR Fecal DNA MicroPrep™ **ZR Fecal DNA MiniPrep™** **ZR Fecal DNA MidiPrep™** **ZR-96 Fecal DNA Kit™**	Bead Bashing, Spin Column Format (up to 5 µg/prep.) Bead Bashing, Spin Column Format (up to 25 µg/prep.) Bead Bashing, Spin Column Format (up to 125 µg/prep.) Bead Bashing, 96-Well Format (up to 5 µg/well)	50 preps. 50 preps. 25 preps. 2x96 preps.	**D6012** **D6010** **D6110** **D6011**
ZR Tissue & Insect DNA MicroPrep™ **ZR Tissue & Insect DNA MiniPrep™** **ZR Tissue & Insect DNA MidiPrep™** **ZR-96 Tissue & Insect DNA Kit™**	Bead Bashing, Spin Column Format (up to 5 µg/prep.) Bead Bashing, Spin Column Format (up to 25 µg/prep.) Bead Bashing, Spin Column Format (up to 125 µg/prep.) Bead Bashing, 96-Well Format (up to 5 µg/well)	50 preps. 50 preps. 25 preps. 2x96 preps.	**D6015** **D6016** **D6115** **D6017**
ZR Plant/Seed DNA MicroPrep™ **ZR Plant/Seed DNA MiniPrep™** **ZR Plant/Seed DNA MidiPrep™** **ZR-96 Plant/Seed DNA Kit™**	Bead Bashing, Spin Column Format (up to 5 µg/prep.) Bead Bashing, Spin Column Format (up to 25 µg/prep.) Bead Bashing, Spin Column Format (up to 125 µg/prep.) Bead Bashing, 96-Well Format (up to 5 µg/well)	50 preps. 50 preps. 25 preps. 2x96 preps.	**D6022** **D6020** **D6120** **D6021**

* Uncapped Spin Column Format