



ZYMO RESEARCH

*The Beauty of Science is to Make Things Simple*

# INSTRUCTION MANUAL

## ZR Viral DNA Kit™

Catalog Nos. D3015 & D3016

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For Laboratory Use Only

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ZYMO RESEARCH CORP.

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## I. General Information

### Description

Zymo Research's **ZR Viral DNA Kit™** provides a hassle-free method for the rapid isolation of high-quality viral DNA from a wide range of biological sources. Denaturation of viral particles and DNA adsorption onto Zymo Research's **Zymo-Spin IC™ Columns** is accomplished using the unique **ZR Viral DNA Buffer™**. Reagents in the **ZR Viral DNA Kit™** are optimized to extract viral DNA from whole blood, (fresh and stored), tissue, ascites, cultured cells, and from liquid samples. DNA can be eluted with either water or the supplied elution buffer. DNA isolated using the **ZR Viral DNA Kit™** is suitable for subsequent PCR, nucleotide blotting, and restriction endonuclease digestion procedures.

### Highlights

- Quick (15 minute) recovery of viral DNA from a wide range of sources using Fast-Spin column technology.
- Column design allows DNA to be eluted at high concentrations into minimal volumes of water or elution buffer.
- Compatible with commonly used anti-coagulants. (e.g., heparin, EDTA, citrate)
- Eluted DNA is suitable for use in PCR, Southern blotting, and restriction endonuclease digestion.
- DNA can be purified from fresh blood samples immediately or at a later time after blood samples have been stabilized in **ZR Viral DNA Buffer™**.
- Omits the use of organic denaturants as well as proteinases.

### Specifications

- **DNA Purity** – High-quality viral DNA can be eluted with either water or the supplied elution buffer for subsequent experiments or storage, respectively.
- **DNA Recovery** – Typically, up to 5 µg total DNA can be eluted into as little as 6-10 µl water or elution buffer.
- **DNA Size Limits** – From 100 bp up to 50 kb.
- **Sample Sources** – Serum, plasma, tissue, or cells derived from humans, mice, rabbits, etc.
- **Stability of Product Reagents** – Integrity of kit components is guaranteed for up to one year from date of purchase.
- **Quality Control** – Reagents are routinely tested on a lot-to-lot basis to ensure they provide maximal performance and reliability.

**Note:** Satisfaction of all Zymo Research products is guaranteed. If you should be dissatisfied with this product, please call 1-888-882-9682.

## Product Contents

ZR Viral DNA Kit™ Kit Size	D3015 (50 Preps.)	D3016 (200 Preps.)	Storage Temperature
ZR Viral DNA Buffer™	50 ml	2x100 ml	Room Temp.
DNA Wash Buffer*	6 ml	24 ml	Room Temp.
Elution Buffer	4 ml	10 ml	Room Temp.
Zymo-Spin IC™ Columns	50 ct.	200 ct.	Room Temp.
Collection Tubes	50 ct.	200 ct.	Room Temp.
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\* Ethanol must be added prior to use as indicated on **DNA Wash Buffer** label.

## Ordering Information

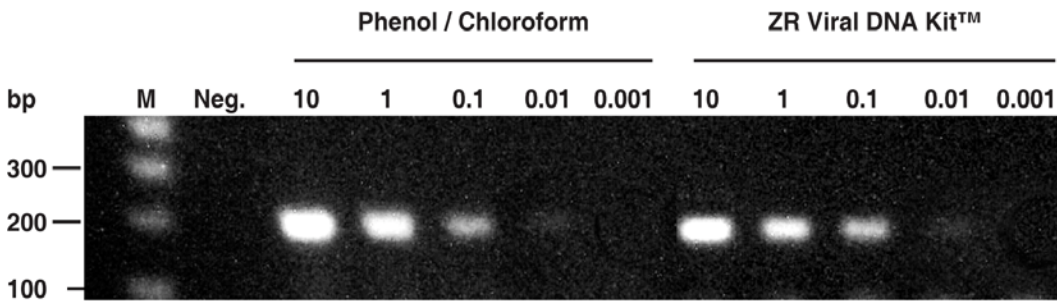
Product Description	Catalog No.	Kit Size
ZR Viral DNA Kit™	D3015	50 Preps.
ZR Viral DNA Kit™	D3016	200 Preps.

For Individual Sale	Catalog No.	Amount
ZR Viral DNA Buffer™	D3015-1-50	50 ml
	D3016-1-100	100 ml
DNA Wash Buffer (concentrate)	D4003-2-6	6 ml
	D4003-2-24	24 ml
Zymo-Spin IC™ Columns	C1004-50	50 ct.
	C1004-250	250 ct.
Collection Tubes	C1001-50	50 ct.
	C1001-500	500 ct.
	C1001-1000	1,000 ct.
DNA Elution Buffer	D3004-4-4	4 ml
	D3004-4-16	16 ml

## II. Protocol

### Overview

The **ZR Viral DNA Kit™** employs a single-buffer system that allows for viral particle lysis and subsequent DNA adsorption onto the matrix of the **Zymo-Spin IC™ Column**. The DNA is washed twice then eluted with water or the supplied elution buffer. The entire DNA isolation procedure typically takes about 15 minutes.



Human HBV DNA was isolated from 10 to 0.001 µl of human serum using phenol/cholorform or Zymo Research's **Viral DNA Kit™**. The presence of HBV DNA is evidenced by an ~ 200 bp PCR product. Lane "M" is a 100 bp DNA Ladder and "Neg." the negative control for PCR.

### Reagent Preparation

- Before starting, add 24 ml 100% ethanol to the 6 ml **DNA Wash Buffer** concentrate (96 ml 100% ethanol to the 24 ml **DNA Wash Buffer** concentrate) to obtain the final **DNA Wash Buffer** solution.

For **Technical Assistance**, please contact those at **Zymo Research's Technical Department** at 1-888-882-9682 or E-mail to [tech@zymoresearch.com](mailto:tech@zymoresearch.com).

**Note:** Alternatively, add 26 ml and 104 ml of 95% ethanol to the 6 ml and 24 ml sizes of the **DNA Wash Buffer** concentrate, respectively.

## Method

The following protocol is designed for the isolation of viral DNA from  $\leq 200 \mu\text{l}$  biological liquid (e.g., serum, plasma, CSF, etc.) or  $\leq 200 \mu\text{l}$  cells in suspension at a concentration of  $\leq 1 \times 10^5$  cells/ml.

1. In a 1.5 ml microcentrifuge tube, add 4 volumes of **ZR Viral DNA Buffer™** to each volume of sample. (e.g., 800  $\mu\text{l}$  lysis buffer to 200  $\mu\text{l}$  serum). Mix briefly by vortexing. Allow to stand at room temperature for 5-10 minutes.
2. Transfer the mixture to a **Zymo-Spin IC™ Column** in a **Collection Tube**. Centrifuge at  $\geq 10,000$  rpm for 1 minute. Discard the flow-through from the collection tube.
3. Add 300  $\mu\text{l}$  **DNA Wash Buffer** to the column. Centrifuge at  $\geq 10,000$  rpm for 1 minute. Discard the flow-through.
4. Repeat step 3.
5. Place the **Zymo-Spin IC™ Column** into a microcentrifuge tube. Add 6-10  $\mu\text{l}$  water or the supplied elution buffer to the column. Let stand at room temperature for 1 minute. Centrifuge at  $\geq 10,000$  rpm for 1 minute to elute the DNA. Viral DNA is now ready for use.

**Note:** Longer incubation periods may be required for some samples.

**Note:** It may be necessary to centrifuge the sample/**ZR Viral DNA Buffer™** mixture before transferring the supernatant to the **Zymo-Spin™ Column** to remove particulate matter that may clog the column.

**Note:** Alternatively, a lower concentration of DNA can be obtained by eluting the DNA with a higher volume of water or elution buffer.

**Note:** If DNA will be quantitated using a spectrophotometer (Abs. 260-280 nm), use water instead of the supplied **Elution Buffer** to elute the DNA from the column.

Note - ™ Trademarks of Zymo Research Corporation. This product is for research use only and should only be used by trained professionals. Some reagents included with this kit are chaotropic and are irritants. Wear protective gloves and eye protection. Follow the safety guidelines and rules enacted by your research institution or facility.

## Popular DNA Purification & Analysis Products from Zymo

Product	Description	Kit Size	Cat No. (Column Format)
<b>DNA Clean &amp; Concentrator-5 Kit™</b>	Clean and concentrate DNA from any reaction or “crude” preparation in 2 min. A 6 µl minimum elution volume allows for highly concentrated DNA. Designed for samples containing up to 5 µg of DNA.	50 Preps	<b>D4003</b> (uncapped)
		200 Preps	<b>D4004</b> (uncapped)
		50 Preps	<b>D4013</b> (capped)
		200 Preps	<b>D4014</b> (capped)
<b>ZR-96 DNA Clean &amp; Concentrator-5 Kit™</b>	Quick (15 minute), high-output recovery of pure DNA from PCR, endonuclease digestions, plasmid preparations, etc. 10-15 µl minimum elution volume allows for highly concentrated DNA. Designed for samples containing up to 5 µg of DNA.	2x96 Preps	<b>D4023</b>
		4x96 Preps	<b>D4024</b>
<b>DNA Clean &amp; Concentrator-25 Kit™</b>	Clean and concentrate DNA from any reaction in 2 min. 25 µl minimum elution volume allows for highly concentrated DNA. Designed for samples containing up to 25 µg of DNA.	50 Preps 200 Preps	<b>D4005</b> <b>D4006</b>
<b>Zymoclean Gel DNA Recovery Kit™</b>	Purify DNA from agarose gels in as little as 15 min. DNA sizes range from 75 bp to 23 Kb. 6 µl minimal elution volume (70-95% recovery rate).	50 Preps	<b>D4001</b>
		200 Preps	<b>D4002</b>
<b>ZR-96 Zymoclean Gel DNA Recovery Kit™</b>	High-output DNA purification from agarose gels in as little as 15 min. DNA sizes range from 75 bp to 23 Kb.	2x96 Preps	<b>D4021</b>
		4x96 Preps	<b>D4022</b>
<b>EZ DNA Methylation Kit™</b>	Streamlined kit for the conversion of unmethylated cytosines in DNA to uracil via the <u>chemical-denaturation</u> of DNA and a specially designed CT Conversion Reagent™. DNA is then desulphonated and subsequently cleaned using Fast-Spin column technology. No messy precipitations. Ultra-pure recovered DNA can be used for Methylation Specific PCR (MSP) and bisulfite sequencing applications.	50 Rxns	<b>D5001</b>
		200 Rxns	<b>D5002</b>
		2x96 Rxns	<b>D5003</b>
<b>EZ DNA Methylation-Gold Kit™</b>	Streamlined kit for the conversion of unmethylated cytosines in DNA to uracil via <u>heat-denaturation</u> of DNA and a specially designed CT Conversion Reagent™. DNA is then desulphonated and subsequently cleaned using Fast-Spin column technology. No messy precipitations. Ultra-pure recovered DNA can be used for Methylation Specific PCR (MSP) and bisulfite sequencing applications.	50 Rxns	<b>D5005</b>
		200 Rxns	<b>D5006</b>
		2x96 Rxns	<b>D5007</b>
<b>Pinpoint Slide DNA Isolation System™</b>	Recover genomic DNA from paraffin-embedded or fresh tissue sections for PCR. Ideal for isolating DNA from clinical tissue samples.	50 Preps	<b>D3001</b>
<b>ZR Genomic DNA I Kit™</b>	Genomic DNA isolation from whole blood, tissue culture cells, solid tissue and liquid samples. (Silica bead format is scalable to fit your requirements).	100 Preps	<b>D3004</b>
		400 Preps	<b>D3005</b>
<b>ZR Genomic DNA II Kit™</b>	Genomic DNA purification from whole blood, tissue culture cells, solid tissue and liquid samples. No requirement for beads or phenol chloroform.	50 Preps	<b>D3006</b>
		200 Preps	<b>D3007</b>
<b>ZR-96 Genomic DNA Kit™</b>	High-output genomic DNA purification from whole blood, tissue culture cells, solid tissue and liquid samples. No requirement for beads or phenol chloroform.	2x96 Preps	<b>D3010</b>
		4x96 Preps	<b>D3011</b>
<b>Zymoprep I™</b>	Efficient purification method for yeast plasmid DNA: Works well for library plasmid recovery from yeast two-hybrid screens.	100 Preps	<b>D2001</b>
<b>Zymoprep II™</b>	Efficient purification method for yeast plasmid DNA: Works well for library plasmid recovery from yeast two-hybrid screens.	50 Preps	<b>D2004</b>
<b>Zyppy Plasmid Miniprep I Kit™</b>	High-purity plasmid DNA purification in minutes: (alkaline lysis/Fast-Spin column format for low elution volume 40 µl).	100 Preps	<b>D4015</b>
		400 Preps	<b>D4016</b>
<b>Zyppy Plasmid Miniprep II Kit™</b>	High-purity plasmid DNA purification in minutes: (alkaline lysis/Fast-Spin column format for low elution volume 25 µl).	100 Preps	<b>D4019</b>
		400 Preps	<b>D4020</b>
<b>ZR Viral DNA Kit™</b>	Isolation of viral DNA from cell-free body fluids or sample mixtures containing cells at concentrations less than 10 <sup>5</sup> cells per ml.	50 Preps	<b>D3015</b>
		200 Preps	<b>D3016</b>
<b>ZR-96 Viral DNA Kit™</b>	High-output (96-well) isolation of viral DNA from cell-free body fluids or sample mixtures containing cells at concentrations less than 10 <sup>5</sup> cells per ml.	2x96 Preps	<b>D3017</b>
		4x96 Preps	<b>D3018</b>

\*Bulk quantities are available upon request. Please contact: [busdev@zymoresearch.com](mailto:busdev@zymoresearch.com) or call 1-888-882-9682 for assistance.

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