



ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

INSTRUCTION MANUAL

ZR Fungal/Bacterial DNA Kit™

Catalog No. **D6005**

Highlights

- Simple, efficient isolation of DNA from all types of tough-to-lyse fungi (e.g., yeast) and bacteria in as little as 15 minutes.
- State-of-the-art, ultra-high density **BashingBeads™** are fracture resistant and chemically inert.
- Can be used with any bead mill, disrupter, or vortex that can accommodate standard 2.0 ml tubes.
- Omits the use of organic denaturants as well as proteinases.

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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

ZR Fungal/Bacterial DNA Kit™ (Kit Size)	D6005 (50 preps.)	Storage Temperature
ZR BashingBead™ Lysis Tubes	50 tubes	Room Temp.
Fungal/Bacterial DNA Binding Buffer	100 ml	Room Temp.
DNA Pre-Wash Buffer*	15 ml	Room Temp.
Fungal/Bacterial DNA Wash Buffer	50 ml	Room Temp.
DNA Elution Buffer	10 ml	Room Temp.
Zymo-Spin™ IV Spin Filters (Orange Tops)	50 filters	Room Temp.
Zymo-Spin™ IIC Columns	50 columns	Room Temp.
Collection Tubes	150 tubes	Room Temp.
Instruction Manual	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 maximal performance and reliability.

* A precipitate may have formed in the DNA Pre-Wash Buffer during shipping. To completely resuspend the buffer, incubate the bottle at 30 – 37 °C for 30 minutes and mix by inversion. DO NOT MICROWAVE.

Specifications

- **Format** – Bead Beating, Spin Column.
- **Sample Sources** – 50-100 mg (wet weight) fungi or bacteria or up to 200 mg tissue. This equates to approximately 10^9 bacterial cells, 10^8 yeast cells and 10^7 mammalian cells.
- **DNA Purity** – High quality DNA is eluted with **DNA Elution Buffer** making it perfect for PCR. Absorbance_{260 nm/280 nm} > 1.8
- **DNA Size Limits** – > 1 kb
- **DNA Recovery** – Typically, up to 25 µg total DNA is eluted into 100 µl (25 µl minimum) **DNA Elution Buffer** per sample. For DNA 75 bp to 10 kb, the recovery is 70-90%. For DNA 11 kb to 23 kb the recovery is 50-70%.
- **Equipment** – Microcentrifuge, vortex, cell disrupter/pulverizer (optional)

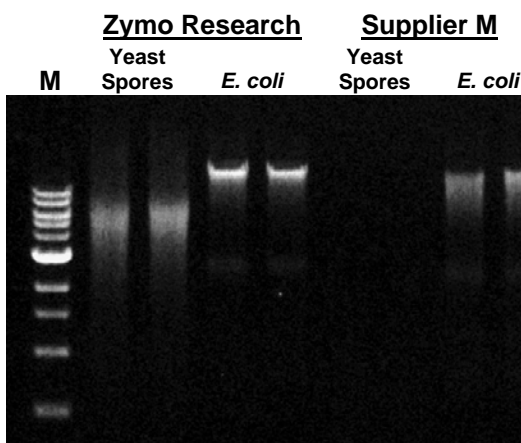
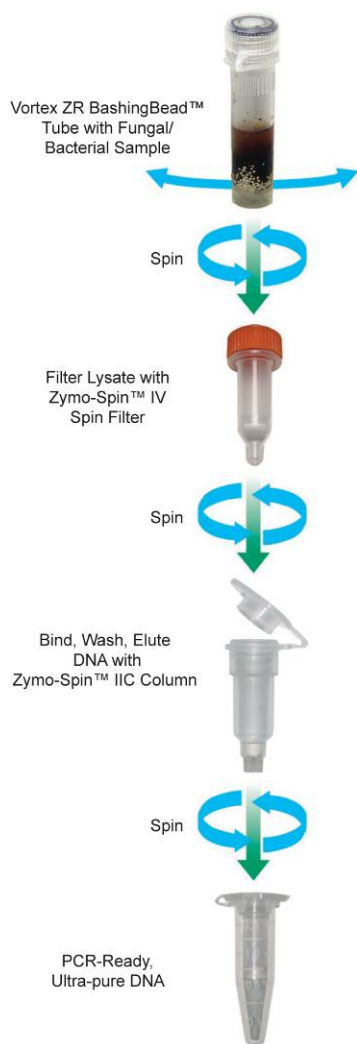
Note - ™ Trademarks of Zymo Research Corporation. This product is for research use only and should only be used by trained professionals. Some reagents included with this kit are irritants. Wear protective gloves and eye protection. Follow the safety guidelines and rules enacted by your research institution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

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Product Description

The **ZR Fungal/Bacterial DNA Kit™** is designed for the simple, rapid isolation of DNA from tough-to-lyse fungi, including *A. fumigatus*, *C. albicans*, *N. crassa*, *S. cerevisiae*, *S. pombe*, as well as from mycelium and Gram (+) and (-) bacteria. The procedure is easy and can be completed in as little as 15 minutes: fungal and/or bacterial samples are added directly to a **ZR BashingBead™ Lysis Tube** and rapidly and efficiently lysed without using organic denaturants or proteinases. The DNA is isolated and purified using our *Fast-Spin* column technology and is ideal for downstream molecular-based applications including PCR, array, etc. A schematic of the **ZR Fungal/Bacterial DNA Kit™** procedure is shown below.



High yield DNA is successfully isolated from *Saccharomyces cerevisiae* (spores) and *E. coli* cells using the **ZR Fungal/Bacterial DNA Kit™**. Equivalent amounts of yeast or bacteria were processed using the **ZR Fungal/Bacterial DNA Kit™** or the kit from supplier M. Equal volumes of eluted DNA were then analyzed in a 0.8% (w/v) agarose/ethidium bromide gel. The size marker "M" is a 1 kb ladder (Zymo Research).

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

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Protocol

This equates to approximately 10^9 bacterial cells, 10^8 yeast cells or 10^7 mammalian cells.

Cap tube tightly to prevent leakage.

Alternatively, a standard bench top vortex can be used although the overall yield of DNA may be lower.

The **Zymo-Spin™ IIC Column** has a maximum capacity of 800 μ l.

1. Add 50-100 mg (wet weight) fungal or bacterial cells that have been resuspended in up to 200 μ l of water or isotonic buffer (e.g., PBS) or up to 200 mg of tissue to a **ZR BashingBead™ Lysis Tube**.

2. Secure in a bead beater fitted with a 2.0 ml tube holder assembly (e.g., Scientific Industries' Disruptor Genie™, Cat. No. S6001-2 from Zymo Research Corp.) and process at maximum speed for 5 minutes.

Processing times may be as little as 1 minute when using high-speed cell disrupters (e.g., FastPrep® and Precellys®). See manufacturers' literature for operating information.

3. Centrifuge the **ZR BashingBead™ Lysis Tube** in a microcentrifuge at $\geq 10,000 \times g$ for 1 minute.

4. Transfer up to 400 μ l supernatant to a **Zymo-Spin™ IV Spin Filter** (orange top) in a **Collection Tube** and centrifuge at 7,000 rpm ($\sim 7,000 \times g$) for 1 minute.

Snap off the base of the **Zymo-Spin IV™ Spin Filter** prior to use.

5. Add 1,200 μ l of **Fungal/Bacterial DNA Binding Buffer** to the filtrate in the **Collection Tube** from Step 4.

6. Transfer 800 μ l of the mixture from Step 5 to a **Zymo-Spin™ IIC Column** in a **Collection Tube** and centrifuge at $10,000 \times g$ for 1 minute.

7. Discard the flow through from the **Collection Tube** and repeat Step 6.

8. Add 200 μ l **DNA Pre-Wash Buffer** to the **Zymo-Spin™ IIC Column** in a new **Collection Tube** and centrifuge at $10,000 \times g$ for 1 minute.

9. Add 500 μ l **Fungal/Bacterial DNA Wash Buffer** to the **Zymo-Spin™ IIC Column** and centrifuge at $10,000 \times g$ for 1 minute.

10. Transfer the **Zymo-Spin™ IIC Column** to a clean 1.5 ml microcentrifuge tube and add 100 μ l **DNA Elution Buffer** directly to the column matrix. Centrifuge at $10,000 \times g$ for 30 seconds to elute the DNA.

Ultra-pure DNA is now ready for use in your experiments.

Disruptor Genie™ is a trademark of Scientific Industries, Inc.
FastPrep® is a registered trademark of Qbiogene, Inc.
Precellys® is a registered trademark of Bertin Technologies.

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Ordering Information

Product Description	Catalog No.	Kit Size
ZR Fungal/Bacterial DNA Kit™	D6005	50 preps.

For Individual Sale	Catalog No.	Amount
Fungal/Bacterial DNA Binding Buffer	D6005-1-100	100 ml
DNA Pre-Wash Buffer	D3004-5-15	15 ml
Fungal/Bacterial DNA Wash Buffer	D6005-2-50	50 ml
DNA Elution Buffer	D3004-4-10	10 ml
ZR BashingBead™ Lysis Tubes	S6002-50	50 tubes
Zymo-Spin™ IV Spin Filters (Orange Tops)	C1007-50	50 filters
Zymo-Spin™ IIC Columns	C1008-50	50 columns
Collection Tubes	C1001-50	50 tubes
	C1001-500	500 tubes
	C1001-1000	1,000 tubes
Disruptor Genie™, 120V w/ 2.0 ml Tube Holder Assembly	S6001-2	1 unit
TurboMix Attachment, 2.0 ml (Permanently mounts to most existing Vortex-Genie 2 and Vortex-Genie 2T mixers converting them to a Disruptor Genie™.	S6004-2	1 unit



The **Disruptor Genie™** with 2.0 ml Tube Holder from Scientific Industries, Inc. Cat. No. S6001-2 from Zymo Research Corp.

Popular DNA Purification & Analysis Products from Zymo Research

Product	Description	Kit Size (Preps)	Catalog No. (column format)
DNA Clean & Concentrator-5™	Clean & concentrate DNA from any reaction or "crude" preparation in 2 minutes. A 6 µl minimum elution volume allows for highly concentrated DNA. Designed for samples containing up to 5 µg of DNA.	50	D4003 (uncapped)
		200	D4004 (uncapped)
		50	D4013 (capped)
		200	D4014 (capped)
DNA Clean & Concentrator-25™	Clean & concentrate DNA in minutes. 25 µl minimum elution volume allows for highly concentrated DNA. Designed for purifying up to 25 µg of DNA.	50	D4005 (uncapped)
		200	D4006 (uncapped)
		50	D4033 (capped)
		200	D4034 (capped)
DNA Clean & Concentrator-100™	Clean & concentrate DNA in minutes. 100 µl minimum elution volume allows for highly concentrated DNA. Designed for purifying up to 100 µg of DNA.	25	D4029
		50	D4030
DNA Clean & Concentrator-500™	Clean & concentrate DNA in minutes. 1 ml minimum elution volume allows for highly concentrated DNA. Designed for samples containing up to 500 µg of DNA.	10	D4031
		20	D4032
ZR-96 DNA Clean & Concentrator-5™	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	D4023
		4x96	D4024
Zymoclean™ Gel DNA Recovery Kit	Purify DNA from high and low-melting agarose gels in minutes	50	D4001
		200	D4002
ZR-96 Zymoclean™ Gel DNA Recovery Kit	High-throughput DNA purification from high and low-melting agarose gels.	2x96	D4021
		4x96	D4022
Pinpoint Slide DNA Isolation System™	Recover genomic DNA from paraffin-embedded or fresh tissue sections for PCR. Ideal for isolating DNA from clinical tissue samples.	50	D3001
Zyppy™ Plasmid Miniprep Kit	Pellet-Free™ plasmid DNA purification in minutes: (alkaline lysis/spin column format for low 30 µl elution volume).	50	D4036
		100	D4019
		400	D4020
Zyppy™ Plasmid Midiprep Kit	Pellet-Free™ plasmid DNA purification in minutes: (alkaline lysis/spin column format and 150 µl minimum elution volume).	25	D4025
		50	D4026
Zyppy™ Plasmid Maxiprep Kit	High-purity plasmid DNA purification in minutes: (alkaline lysis/spin column format and 2 ml minimum elution volume).	10	D4027
		20	D4028
ZR Genomic DNA I Kit™	Genomic DNA isolation from whole blood, tissue culture cells, solid tissue and liquid samples. (Silica bead format is scalable to fit your requirements).	100	D3004
		400	D3005
ZR Genomic DNA II Kit™	Genomic DNA purification from whole blood, tissue culture cells, solid tissue and liquid samples. No requirement for beads or phenol chloroform.	50	D3006 (uncapped)
		200	D3007 (uncapped)
		50	D3024 (capped)
		200	D3025 (capped)
ZR-96 Genomic DNA Kit™	High-output genomic DNA purification from whole blood, tissue culture cells, solid tissue and liquid samples. No requirement for beads or phenol chloroform.	2x96	D3010
		4x96	D3011
ZR Soil microbe DNA Kit™	Simple, rapid isolation of humic-free, PCR-quality genomic DNA from soil microbes.	50	D6001
ZR Fungal/Bacterial DNA Kit™	Simple, rapid isolation of PCR-quality genomic DNA from fungi.	50	D6005
ZR Fecal DNA Kit™	Simple, rapid isolation of PCR-quality genomic DNA from feces.	50	D6010
ZR Viral DNA Kit™	Isolation of viral DNA from cell-free body fluids or sample mixtures containing cells at concentrations less than 10 ⁵ cells per ml.	50	D3015
		200	D3016
ZR-96 Viral DNA Kit™	High-output (96-well) isolation of viral DNA from cell-free body fluids or sample mixtures containing cells at concentrations less than 10 ⁵ cells per ml.	2x96	D3017
		4x96	D3018
EZ DNA Methylation™ Kit	Streamlined kit for the conversion of unmethylated cytosines in DNA to uracil via the <u>chemical-denaturation</u> of DNA using our specially designed CT Conversion Reagent™. DNA is then desulphonated and subsequently cleaned using <i>Fast-Spin</i> column technology. Ultra-pure recovered DNA can be used for PCR and bisulfite sequencing applications.	50	D5001
		200	D5002
		2x96	D5003
EZ DNA Methylation-Gold™ Kit	Streamlined kit for the conversion of unmethylated cytosines in DNA to uracil via <u>heat-denaturation</u> of DNA using our specially designed CT Conversion Reagent™. DNA is then desulphonated and subsequently cleaned using <i>Fast-Spin</i> column technology. Ultra-pure recovered DNA can be used for PCR and bisulfite sequencing applications. <i>3 hour processing time!</i>	50	D5005
		200	D5006
		2x96	D5007

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

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