



ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

INSTRUCTION MANUAL

ZR Fungal/Bacterial DNA MiniPrep™

Catalog No. **D6005**

Highlights

- Simple, efficient isolation of DNA (up to 25 µg/prep) 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 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.

To isolate total RNA, use the **ZR Fungal/Bacterial RNA MicroPrep™ (R2010)** and **MiniPrep™ (R2014)**.

Product Contents

ZR Fungal/Bacterial DNA MiniPrep™ (Kit Size)	D6005 (50 preps.)	Storage Temperature
ZR BashingBead™ Lysis Tubes	50	Room Temp.
Lysis Solution	40 ml	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	Room Temp.
Zymo-Spin™ IIC Columns	50	Room Temp.
Collection Tubes	150	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.

* For optimal performance, add beta-mercaptoethanol to 0.5%(v/v) i.e., 500 µl per 100 ml.

** 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 Purification
- **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. Spores, pollen, nematodes, as well as other microorganisms can also be sampled.
- **DNA Purity** – High quality DNA is eluted with **DNA Elution Buffer** making it perfect for PCR. $A_{260}/A_{280} > 1.8$
- **DNA Size Limits** – Capable of recovering genomic DNA up to and above 40 kb. In most instances, mitochondrial DNA and viral DNA (if present) will also be recovered.
- **DNA Recovery** – Typically, up to 25 µg total DNA is eluted into 100 µl (25 µl minimum) **DNA Elution Buffer** per sample.
- **Equipment** – Microcentrifuge, Vortex, Cell Disrupter/Pulverizer (recommended)

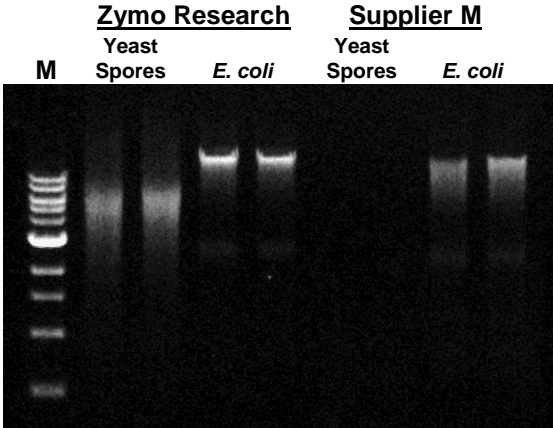
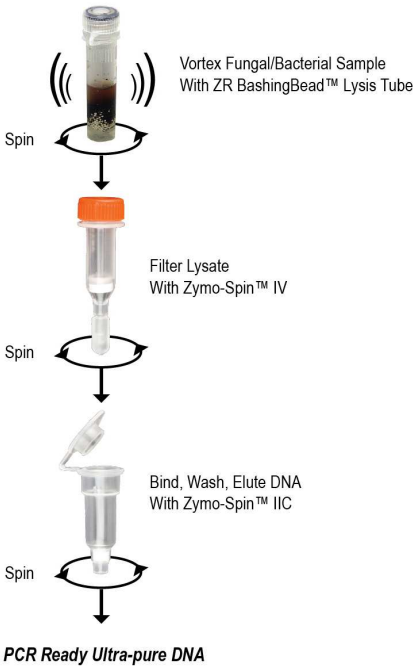
Note - ™ Trademarks of Zymo Research Corporation. This product is for research use only and should only be used by trained professionals. It is not intended for use in diagnostic procedures. Some reagents included with this kit are irritants. Wear protective gloves and eye protection. Follow the safety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

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Product Description

The **ZR Fungal/Bacterial DNA MiniPrep™** 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 by bead beating (e.g., *Xpedition™* Sample Processor, page 5) 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 MiniPrep™** procedure is shown below.



High yield DNA is successfully isolated from *Saccharomyces cerevisiae* (spores) and *E. coli* cells using the **ZR Fungal/Bacterial DNA MiniPrep™**. Equivalent amounts of yeast or bacteria were processed using the **ZR Fungal/Bacterial DNA MiniPrep™** 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

For optimal performance, add beta-mercaptoethanol (user supplied) to the **Fungal/Bacterial DNA Binding Buffer** to a final dilution of 0.5%(v/v) i.e., 500 µl per 100 ml.

1. Add 50-100 mg (wet weight) fungal or bacterial cells that have been resuspended in up to 200 µl of water or isotonic buffer (e.g., PBS) or up to 200 mg of tissue to a **ZR BashingBead™ Lysis Tube**. Add 750 µl **Lysis Solution** to the tube.
2. Secure in a bead beater fitted with a 2 ml tube holder assembly (e.g., Disruptor Genie™) and process at maximum speed for 5 minutes.

Processing times may be as little as 40 seconds when using high-speed cell disrupters (e.g., the portable **Xpedition™ Sample Processor**, page 5, FastPrep®-24, or similar). See manufacturer's literature for operating information.

3. Centrifuge the **ZR BashingBead™ Lysis Tube** in a microcentrifuge at 10,000 x *g* for 1 minute.
4. Transfer up to 400 µl supernatant to a **Zymo-Spin™ IV Spin Filter** (orange top) in a **Collection Tube** and centrifuge at 7,000 rpm (~7,000 x *g*) for 1 minute.

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

5. Add 1,200 µl of **Fungal/Bacterial DNA Binding Buffer** to the filtrate in the **Collection Tube** from Step 4.
6. Transfer 800 µl of the mixture from Step 5 to a **Zymo-Spin™ IIC Column** in a **Collection Tube** and centrifuge at 10,000 x *g* for 1 minute.
7. Discard the flow through from the **Collection Tube** and repeat Step 6.
8. Add 200 µl **DNA Pre-Wash Buffer** to the **Zymo-Spin™ IIC Column** in a new **Collection Tube** and centrifuge at 10,000 x *g* for 1 minute.
9. Add 500 µl **Fungal/Bacterial DNA Wash Buffer** to the **Zymo-Spin™ IIC Column** and centrifuge at 10,000 x *g* for 1 minute.
10. Transfer the **Zymo-Spin™ IIC Column** to a clean 1.5 ml microcentrifuge tube and add 100 µl (25 µl minimum) **DNA Elution Buffer** directly to the column matrix. Centrifuge at 10,000 x *g* for 30 seconds to elute the DNA.

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

This equates to approximately 10⁹ bacterial cells, 10⁸ yeast cells or 10⁷ 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 µl.

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Ordering Information

Product Description	Catalog No.	Kit Size
ZR Fungal/Bacterial DNA MicroPrep™	D6007	50 preps.
ZR Fungal/Bacterial DNA MiniPrep™	D6005	50 preps.
ZR Fungal/Bacterial DNA MidiPrep™	D6105	25 preps.
ZR-96 Fungal/Bacterial DNA Kit™	D6006	2x96 preps.

For Individual Sale	Catalog No.	Amount
Fungal/Bacterial DNA Binding Buffer	D6005-1-100	100 ml
Lysis Solution	D6001-3-40	40 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
Zymo-Spin™ IV Spin Filters (Orange Tops)	C1007-50	50
Zymo-Spin™ IIC Columns	C1011-50	50
Collection Tubes	C1001-50	50
	C1001-500	500
	C1001-1000	1,000

Lysis Instruments



Description	Cat. No.	Amount
Disruptor Genie™, 120V w/ 2 ml tube holder assembly.	S6001-2-120	1 unit
Disruptor Genie™, 240V w/ 2 ml tube holder assembly.	S6001-2-240	1 unit
TurboMix Attachment, 2 ml Permanently mounts to most existing Vortex Genie™ mixers converting them to a Disruptor Genie™.	S6004-2	1 unit

The **Disruptor Genie™** with 2 ml tube holder from Scientific Industries, Inc. (Cat. No. S6001-2 from Zymo Research Corp.)

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Xpedition™ Sample Prep & Preservation Technologies: The Complete Solution to “TAKE THE LAB TO THE FIELD”

Workflow (e.g., DNA Purification)



For Portable Sample Lysis...



S6020	Xpedition™ Sample Processor	1 unit
D6202	Xpedition™ Soil/Fecal DNA MiniPrep	50 preps.
D6206	Xpedition™ Fungal/Bacterial DNA MiniPrep	50 preps.
D6216	Xpedition™ Tissue & Insect DNA MiniPrep	50 preps.
D6221	Xpedition™ Plant/Seed DNA MiniPrep	50 preps.
D6202-1-40	Xpedition™ Lysis/Stabilization Solution	40 ml

All Xpedition™ DNA MiniPrep Kits feature a unique lysis/stabilization solution. This allows high quality DNA to be isolated immediately or when convenient for the researcher following storage/transport of sample lysates.

Other Popular Environmental DNA/RNA Purification Products

ENVIRONMENTAL DNA

	D6003	ZR Soil Microbe DNA MicroPrep™	50 preps.
	D6001	ZR Soil Microbe DNA MiniPrep™	50 preps.
	D6101	ZR Soil Microbe DNA MidiPrep™	25 preps.
	D6002	ZR-96 Soil Microbe DNA Kit™	2 x 96 preps.
	D6007	ZR Fungal/Bacterial DNA MicroPrep™	50 preps.
	D6005	ZR Fungal/Bacterial DNA MiniPrep™	50 preps.
	D6105	ZR Fungal/Bacterial DNA MidiPrep™	25 preps.
	D6006	ZR-96 Fungal/Bacterial DNA Kit™	2 x 96 preps.
	D6012	ZR Fecal DNA MicroPrep™	50 preps.
	D6010	ZR Fecal DNA MiniPrep™	50 preps.
	D6110	ZR Fecal DNA MidiPrep™	25 preps.
	D6011	ZR-96 Fecal DNA Kit™	2 x 96 preps.
	D6015	ZR Tissue & Insect DNA MicroPrep™	50 preps.
	D6016	ZR Tissue & Insect DNA MiniPrep™	50 preps.
	D6115	ZR Tissue & Insect DNA MidiPrep™	25 preps.
	D6017	ZR-96 Tissue & Insect DNA Kit™	2 x 96 preps.
	D6022	ZR Plant/Seed DNA MicroPrep™	50 preps.
	D6020	ZR Plant/Seed DNA MiniPrep™	50 preps.
	D6120	ZR Plant/Seed DNA MidiPrep™	25 preps.
	D6021	ZR-96 Plant/Seed DNA Kit™	2 x 96 preps.

ENVIRONMENTAL RNA

	R2040	ZR Soil/Fecal RNA MicroPrep™	50 preps.
	R2010	ZR Fungal/Bacterial RNA MicroPrep™	50 preps.
	R2014	ZR Fungal/Bacterial RNA MiniPrep™	50 preps.
	R2030	ZR Tissue & Insect RNA MicroPrep™	50 preps.
	R2024	ZR Plant RNA MiniPrep™	50 preps.

ALSO AVAILABLE

D6030	OneStep™ PCR Inhibitor Removal Kit	50 preps.
D6035	OneStep-96™ PCR Inhibitor Removal Kit	2 x 96 preps.
S6002-50	ZR BashingBead™ Lysis Tubes (0.5 mm)	50 tubes
S6003-50	ZR BashingBead™ Lysis Tubes (2.0 mm)	50 tubes
S6002-96-1	ZR-96 BashingBead™ Lysis Rack (0.5 mm)	1 rack
S6002-96-2	ZR-96 BashingBead™ Lysis Rack (2.0 mm)	1 rack



www.zymoresearch.com/xpedition
See the Xpedition™ Sample Processor in action!

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