

ZR Soil Microbe DNA Kit™

Simple, Rapid DNA Isolation From Soil Microbes in Minutes!

The ZR Soil Microbe DNA Kit™ Advantage

- Speed – The procedure can be performed in as little as 10-15 minutes.
- DNA Quality – Eluted DNA is structurally intact and humic-free making it ideal for PCR.

Easy Isolation of Humic-Free, PCR Quality Genomic DNA from Microorganisms in Soil in as Little as 10-15 Minutes

- Simple, efficient isolation of DNA from soil microbes including tough-to-lyse bacteria, fungi, algae, and protozoa.
- Ultra-high density BashingBeads™ are fracture resistant and chemically inert
- Adaptable for isolation of DNA from cultured bacteria, fungi, and yeast.
- Omits the use of organic denaturants as well as proteinases.

Ideal for use in Agricultural, Forensic, and Microbiology-Based Applications

Input

Up to 0.25 grams of soil per treatment.

The ZR Soil Microbe DNA Kit™ Advantage

Bacteria

Fungi

Protozoa

Algae

For the isolation of PCR-ready DNA from tough-to-lyse soil microorganisms in as little as 10 minutes!

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Simple, Rapid, Isolation From Soil Microbes in Minutes



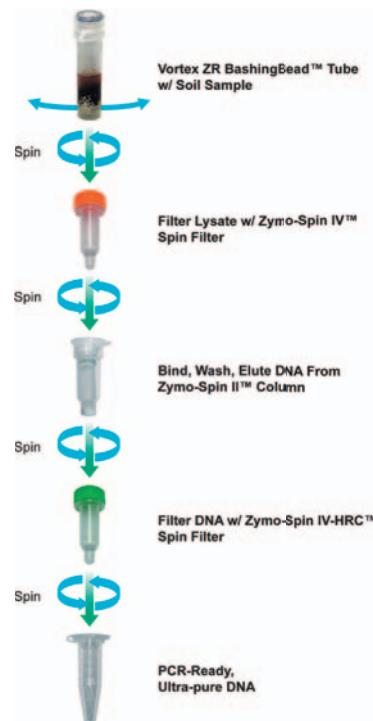
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The **ZR Soil Microbe DNA Kit™** is designed for the simple, rapid isolation of humic-free, PCR-quality genomic DNA from microbes in soil. The kit can be used to successfully isolate DNA from tough-to-lyse bacteria, fungi, protozoa, and algae that inhabit a range of samples including clay, sandy, silty, peaty, chalky, and loamy soils. Soil samples are added to a **ZR BashingBead™ Lysis Tube** where microbes are rapidly and efficiently lysed by bead beating in a uniquely designed lysis buffer. *Fast-Spin* column technology is then used to isolate the DNA which is subsequently filtered to remove humic acids/polyphenols that inhibit PCR. The entire procedure can be performed in as little as 10-15 minutes, and there is no need for organic denaturants or proteinases. The **ZR Soil Microbe DNA Kit™** can also be used to successfully isolate genomic DNA from cultured bacteria, fungi, and yeast. A schematic of the **ZR Soil Microbe DNA Kit™** procedure is shown below.

Outline showing the **ZR Soil Microbe DNA Kit™** procedure.



Comparative Overview

	ZR Soil DNA	Competitor M	Competitor E
Processing Time	10-15 minutes	40-50 minutes	1 hour 30 minutes
Soil Input	≤ 0.25 grams	≤ 0.25 grams	≤ 0.1 grams
DNA Recovery	High	High	Low
DNA Integrity	Good	Fair	Poor
Fidelity of PCR	High	High	Low
Use of Proteinases	No	No	Yes
Use of Organic Denaturants	No	No	No

ZR Soil Microbe DNA Kit™

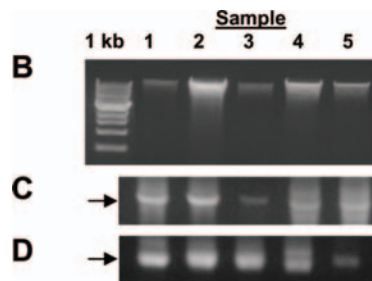
ZR Soil Microbe DNA Kit™ Short Protocol

1. Add soil sample (≤ 0.25 g) to a **ZR BashingBead™ Lysis Tube** and vortex at maximum speed for 5 minutes.
2. Centrifuge the **ZR BashingBead™ Lysis Tube** at full speed for 1 minute.
3. 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 for 1 minute.
4. Add 1,200 μ l of **Soil DNA Binding Buffer** to the filtrate in the **Collection Tube** from Step 3.
5. Transfer 800 μ l of the mixture from Step 4 to a **Zymo-Spin II™ Column** in a **Collection Tube** and centrifuge at full speed for 1 minute. Discard the flow through from the **Collection Tube** and repeat.
6. Add 500 μ l **Soil DNA Wash Buffer** to the **Zymo-Spin II™ Column** in a new **Collection Tube** and centrifuge at full speed for 1 minute. Discard the flow through from the **Collection Tube** and repeat wash.
7. Transfer the column to a clean 1.5 ml microcentrifuge tube and add 100 μ l **DNase/RNase-Free Water**. Centrifuge at full speed for 30 seconds to elute the DNA.
8. Filter the eluted DNA using a **Zymo-Spin IV-HRC™ Spin Filter** (green top) into a 1.5 ml microcentrifuge tube and centrifuge at full speed for 30 seconds.

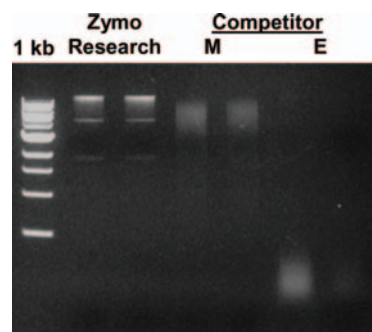


The (optional) Disruptor Genie® w/ 2.0 ml Tube Holder from Scientific Industries, Inc. Cat. No. S6001-2 from Zymo Research Corp.

A



The **ZR Soil Microbe DNA Kit™** can be used to isolate high quality DNA from a variety of soil types which yields robust products following PCR. **Panel A:** Physical characteristics of sampled soils (1-5). **Panel B:** Microbial, genomic DNA was isolated from soil samples (1-5) using the **ZR Soil Microbe DNA Kit™**. Approximately 10% of the eluted DNA was then separated in a 0.8% (w/v) agarose/ethidium bromide gel. **Panels C and D** show the results of PCR of microbial DNA isolated from the samples with primers specific for prokaryotic 16S rRNA (**C**) or eukaryotic rRNA (**D**). In the figures, the 1 kb size marker (NEB) is as indicated and the arrows show the prokaryotic 16S rRNA and eukaryotic rRNA PCR products.



DNA isolated from *Saccharomyces cerevisiae* (strain TMY18) using the **ZR Soil Microbe DNA Kit™** is high quality and structurally intact. Equivalent amounts of yeast were processed using the **ZR Soil Microbe DNA Kit™** or the kits from competitors M and E. Equal volumes of eluted DNA were then analyzed in a 0.8% (w/v) agarose/ethidium bromide gel. The size marker is a 1 kb ladder (NEB).

Ordering Information

Product Description	Catalog No.	Kit Size
ZR Soil Microbe DNA Kit™	D6001	50 Rxns.
Disruptor Genie® Scientific Industries Inc w/ 2.0 ml tube holder	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

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. Disruptor Genie® is a trademark of Scientific Industries, Inc., Bohemia, New York, USA.