ZYMO RESEARCH

DNA Purification Made Simple

Quick-DNA™ Fungal/Bacterial Miniprep Kit

DNA from tough-to-lyse fungi and bacteria samples.

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.
- Omits the use of organic denaturants as well as proteinases.

Catalog Numbers:
D6005

Scan with your smart-phone camera to view the online protocol/video.

tech@zymoresearch.com www.zymoresearch.com Toll Free: (888) 882-9682

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Product Contents

Quick-DNA™ Fungal/Bacterial Miniprep Kit	D6005 (50 Preps.)	Storage Temperature
ZR BashingBead™ Lysis Tubes (0.1 & 0.5 mm)	50	Room Temp.
BashingBead™ Buffer	40 ml	Room Temp.
Genomic Lysis Buffer[1]	100 ml	Room Temp.
DNA Pre-Wash Buffer[2]	15 ml	Room Temp.
g-DNA Wash Buffer	50 ml	Room Temp.
DNA Elution Buffer	10 ml	Room Temp.
Zymo-Spin™ III-F Filters	50	Room Temp.
Zymo-Spin™ IICR Columns	50	Room Temp.
Collection Tubes	150	Room Temp.
Instruction Manual	1	-

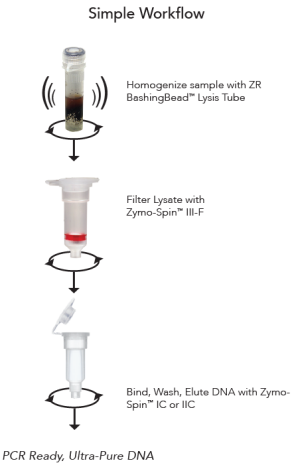
1 For optimal performance, add beta-mercaptoethanol to 0.5%(v/v) *i.e.*, 500 µl per 100 ml.
2 A precipitate may have formed in the **DNA Pre-Wash Buffer** during shipping. To completely resuspend the buffer, incubate the bottle at 30-37ºC for 30 minutes and mix by inversion. DO NOT MICROWAVE.

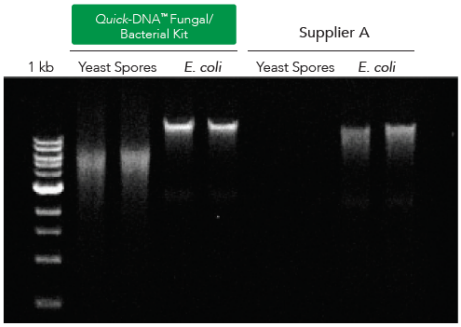
Specifications

- **Format –** Bead Beating, Spin Column Purification
- **Sample Sources –** 50 - 100 mg (wet weight) fungi or bacteria; this equates to approximately 10^9 bacterial cells and 10^8 yeast 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 (35 µl minimum) **DNA Elution Buffer** per sample.
- **Equipment –** Microcentrifuge, Vortex, Cell Disrupter/Pulverizer (recommended)

Product Description

The ***Quick*-DNA™ Fungal/Bacterial Miniprep 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 positive and Gram negative 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 (0.1 & 0.5 mm)** and rapidly and efficiently lysed by bead beating without using organic denaturants or proteinases. The DNA is then isolated and purified using our Zymo-Spin™ Technology and is ideal for downstream molecular-based applications including PCR, array, etc. A schematic of the ***Quick*-DNA™ Fungal/Bacterial Miniprep Kit** procedure is shown below.





DNA isolated from *Saccharomyces cerevisiae* (spores) and *E. coli* using the ***Quick*-DNA™ Fungal/Bacteria Kit** was high-quality and structurally intact. Equivalent amounts of yeast and bacteria were processed using the ***Quick*-DNA™ Fungal/Bacterial Kit** or the Supplier A kit. Equal volumes of eluted DNA were analyzed on a 0.8% (w/v) agarose gel stained with EtBr.

DNA/RNA Shield™ (R1100-50, R1100-250) can be used to stabilize nucleic acids and inactivate infectious agents in a variety of samples, without the need for reagent removal.

For rapid, robust, and simple purification of high quality, inhibitor-free DNA from any sample including feces, soil, water, biofilms, swabs, saliva, body fluids, etc. use the **ZymoBIOMICS™ DNA Miniprep Kit (D4300).**

Protocol

For optimal performance, 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.

1. Add 50 – 100 mg (wet weight) fungal or bacterial cells[1] that have been resuspended in up to 200 µl of water or isotonic buffer (*e.g*., PBS) to a **ZR BashingBead™ Lysis Tube (0.1 mm & 0.5 mm)**. Add 750 µl **BashingBead™ Buffer** to the tube[2].

2. Secure in a bead beater fitted with a 2 ml tube holder assembly and process at maximum speed for ≥ 5 minutes.

   ***Note**: Required processing time will vary depending on the device and application and therefore should be evaluated on a case by case basis.*

   For example, processing times may be as little as 3 minutes when using high-speed cell disrupters (e.g., the portable TerraLyzer™ Sample Processor, FastPrep® -24, or similar) or as long as 20 minutes when using lower speeds (e.g., Disruptor Genie™, or standard benchtop vortexes). See manufacturer's literature for operating information.

3. Centrifuge the **ZR BashingBead™ Lysis Tube (0.1 & 0.5 mm)** in a microcentrifuge at 10,000 x *g* for 1 minute.

4. Transfer up to 400 µl supernatant to a **Zymo-Spin™ III-F Filter** in a **Collection Tube** and centrifuge at 8,000 x *g* for 1 minute.

5. Add 1,200 µl of **Genomic Lysis 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™ IICR Column**[3] 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™ IICR Column** in a new **Collection Tube** and centrifuge at 10,000 x *g* for 1 minute.

9. Add 500 µl **g-DNA Wash Buffer** to the **Zymo-Spin™ IICR Column** and centrifuge at 10,000 x *g* for 1 minute.

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1 This equates to approximately 10^9 bacterial cells and 10^8 yeast cells.
2 Cap tube tightly to prevent leakage.
3 The **Zymo-Spin™ IICR Column** has a maximum capacity of 800 µl.

10. Transfer the **Zymo-Spin™ IICR Column** to a clean 1.5 ml microcentrifuge tube and add 100 µl (35 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.

Ordering Information

Product Description	Catalog No.	Size
Quick-DNA™ Fungal/Bacterial Microprep Kit	D6007	50 Preps.
Quick-DNA™ Fungal/Bacterial Miniprep Kit	D6005	50 Preps.
Quick-DNA™ Fungal/Bacterial Midiprep Kit	D6105	25 Preps.
Quick-DNA™ Fungal/Bacterial 96 Kit	D6006	2 x 96 Preps.

Individual Kit Components	Catalog No.	Amount
Genomic Lysis Buffer	D3004-1-100	100 ml
BashingBead™ Buffer	D6001-3-40	40 ml
DNA Pre-Wash Buffer	D3004-5-15	15 ml
g-DNA Wash Buffer	D3004-2-50	50 ml
DNA Elution Buffer	D3004-4-10	10 ml
ZR BashingBead™ Lysis Tubes (0.1 & 0.5 mm)	S6012-50	50 Tubes
Zymo-Spin™ III-F Filters	C1057-50	50 Pack
Zymo-Spin™ IICR Columns	C1078-50	50 Pack
Collection Tubes	C1001-50 C1001-500 C1001-1000	50 Pack 500 Pack 1,000 Pack

Lysis Instruments		Catalog No.	Amount
	**Disruptor Genie™, 120V w/ 2 ml tube holder assembly.**	S6001-2-120	1 Unit
	Disruptor Genie™, 230V w/ 2 ml tube holder assembly.	S6001-2-230	1 Unit
	TurboMix Attachment, 2 ml Permanently mounts to most existing Vortex Genie™ mixers converting them to a Disruptor Genie™.	S6004	1 Unit

The **Disruptor Genie™** with 2 ml tube holder assembly from Scientific Industries, Inc. (Cat. No. S6001-2-120 from Zymo Research Corp.)

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