INSTRUCTION MANUAL

Quick-DNA™ Tissue/Insect Miniprep Kit

Catalog No. **D6016**

Highlights

- Simple method for the isolation of DNA (up to 25 µg) from fresh, frozen, or stored insect and arthropod specimens in as little as 15 minutes.
- The organic denaturant/proteinase K-free procedure is ideal for processing small organisms including mosquitoes, bees, lice, ticks, and *D. melanogaster*.
- State-of-the-art, ultra-high density ***BashingBeads™*** are fracture resistant and chemically inert.
- Also, compatible with mammalian tissues, cultured cells, and whole blood.

Contents

Product Contents & Specifications..... 1
Product Description 2
Protocol..... 3
Ordering Information..... 4

ZYMO RESEARCH CORP.

Phone: (949) 679-1190 ▪ Toll Free: (888) 882-9682 ▪ Fax: (949) 266-9452 ▪ info@zymoresearch.com ▪ www.zymoresearch.com

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

Product Contents

***Quick*-DNA™ Tissue/Insect Miniprep Kit** (Kit Size)	**D6016** (50 preps.)	**Storage Temperature**
ZR BashingBead™ Lysis Tubes (2.0 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	-

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.

[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 – 37 ºC for 30 minutes and mix by inversion. DO NOT MICROWAVE.

Specifications

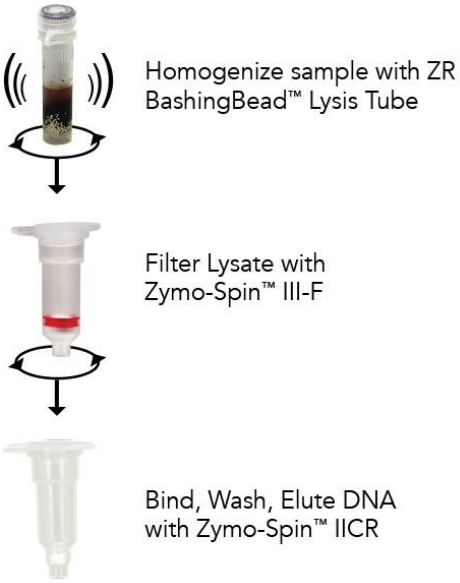
- **Format** – Bead Beating, Spin Column.
- **Sample Sources** – Samples (n ≥ 1 and ≤ 50 mg) of fresh, frozen, or stored insects including: mosquitoes, bees, lice, ticks, *D. melanogaster*, etc. Also, compatible with fresh or frozen mammalian tissues as well as cultured cells, and whole blood.
- **DNA Yield** – Expected yields can range from 1 - 5 µg DNA per mg specimen sampled. For mammalian tissues, yields are 1 - 3 µg DNA per mg of skeletal, heart and brain tissues and 3 - 5 µg DNA per mg of liver, kidney, and lung tissues. Whole blood will yield from 3 - 7 µg DNA per 100 µl.
- **DNA Purity** – High quality DNA is eluted with **DNA Elution Buffer** that is well suited for PCR amplification, endonuclease digestion, etc. 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)

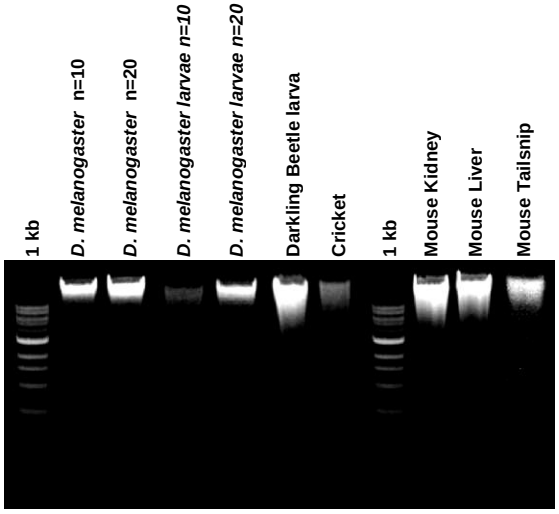
Use the ***Quick*-DNA™ Tissue/Insect Microprep Kit (D6015)** for DNA recoveries up to 5 µg.

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.

Product Description

The ***Quick*-DNA™ Tissue/Insect Miniprep Kit** is designed for the simple, rapid isolation of up to 25 µg total DNA (e.g., genomic, viral, mitochondrial) from small amounts of fresh, frozen, or stored insect specimens including mosquitoes, bees, lice, ticks, and *D. melanogaster*. The procedure is easy and can be completed in as little as 15 minutes: samples are added directly to a **ZR BashingBead™ Lysis Tube** and rapidly and efficiently lysed by bead beating without using organic denaturants or proteinases. The DNA is isolated and purified using our Zymo-Spin™ Technology and is ideal for downstream molecular-based applications including PCR, endonuclease digestion, array, genotyping, etc. Also, the procedure is compatible with mammalian tissues, whole blood, and cultured cells. A schematic of the ***Quick*-DNA™ Tissue/Insect Miniprep Kit** procedure is shown below.





Comparison of DNA yields from various insect and mouse samples using the ***Quick*-DNA™ Tissue/Insect Kit.** Various amounts of sample were processed with equal volumes of eluted DNA analyzed in a 0.8% (w/v) agarose/ethidium bromide gel. The 1 kb DNA size marker is from Zymo Research.

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

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 specimen(s) to a **ZR BashingBead™ Lysis Tube (2.0 mm)**. Add 750 µl **BashingBead™ Buffer** to the tube and cap tightly.

   Note: *Generally, no more than 50 mg tissue should be sampled, for larger samples will exceed the DNA binding capacity of the spin column (See* ***Specifications*** *on page 1). Up to 400 µl of whole blood or up to 8.5 x10^6 cells suspended in 200 µl PBS can also be sampled.*

2. Secure in a bead beater fitted with a 2 ml tube holder assembly (e.g., Disruptor Genie™) and process at maximum speed for 10 minutes.

   Note: *Processing time will vary based on sample input and bead beater. Times may be as little as 5 minutes when using high-speed cell disrupters (FastPrep® -24).*

3. Centrifuge the **ZR BashingBead™ Lysis Tube (2.0 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. Mix well.

6. Transfer 800 µl of the mixture from Step 5 to a **Zymo-Spin™ IICR Column**[1] 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.

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.

[1] The **Zymo-Spin™ IICR Column** has a maximum capacity of about 800 µl.

Ordering Information

Product Description	Catalog No.	Kit Size
***Quick*-DNA™ Tissue/Insect Microprep Kit**	D6015	50 preps.
***Quick*-DNA™ Tissue/Insect Miniprep Kit**	D6016	50 preps.
***Quick*-DNA™ Tissue/Insect 96 Kit**	D6017	2x96 preps.

For Individual Sale	Catalog No.	Amount
ZR BashingBead™ Lysis Tubes (2.0 mm)	S6003-50	50
BashingBead™ Buffer	D6001-3-40	40 ml
Genomic Lysis Buffer	D3004-1-100	100 ml
DNA Pre-Wash Buffer	D3004-5-15	15 ml
gDNA Wash Buffer	D3004-2-50	50 ml
DNA Elution Buffer	D3004-4-10	10 ml
Zymo-Spin™ III-F Filters	C1057-50	50
Zymo-Spin™ IICR Columns	C1078-50 C1078-250	50 250
Collection Tubes	C1001-50 C1001-500 C1001-1000	50 500 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.)