



ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

INSTRUCTION MANUAL

Quick-DNA™ Plant/Seed Miniprep Kit

Catalog No. **D6020**

Highlights

- Simple method for the isolation of inhibitor-free, PCR-quality DNA (up to 25 µg/prep) from a variety of plant and seed samples in as little as 20 minutes.
- The eluted DNA is ideal for downstream molecular-based applications including PCR, arrays, endonuclease digestion, etc.
- State-of-the-art, ultra-high density **BashingBeads™** are fracture resistant and chemically inert.

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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

Quick-DNA™ Plant/Seed Miniprep Kit (Kit Size)	D6020 (50 preps.)	Storage Temperature
ZR BashingBead™ Lysis Tubes (2.0 mm)	50	Room Temp.
BashingBead™ Buffer	40 ml	Room Temp.
Genomic Lysis Buffer¹	100 ml	Room Temp.
DNA Pre-Wash Buffer²	15 ml	Room Temp.
g-DNA Wash Buffer	50 ml	Room Temp.
DNA Elution Buffer	10 ml	Room Temp.
Prep Solution	30 ml	Room Temp.
Zymo-Spin™ III-F Filters	50	Room Temp.
Zymo-Spin™ III-HRC Filters	50	Room Temp.
Zymo-Spin™ IIC Columns	50	Room Temp.
Collection Tubes	200	Room Temp.
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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 °C for 30 minutes and mix by inversion. DO NOT MICROWAVE.

Specifications

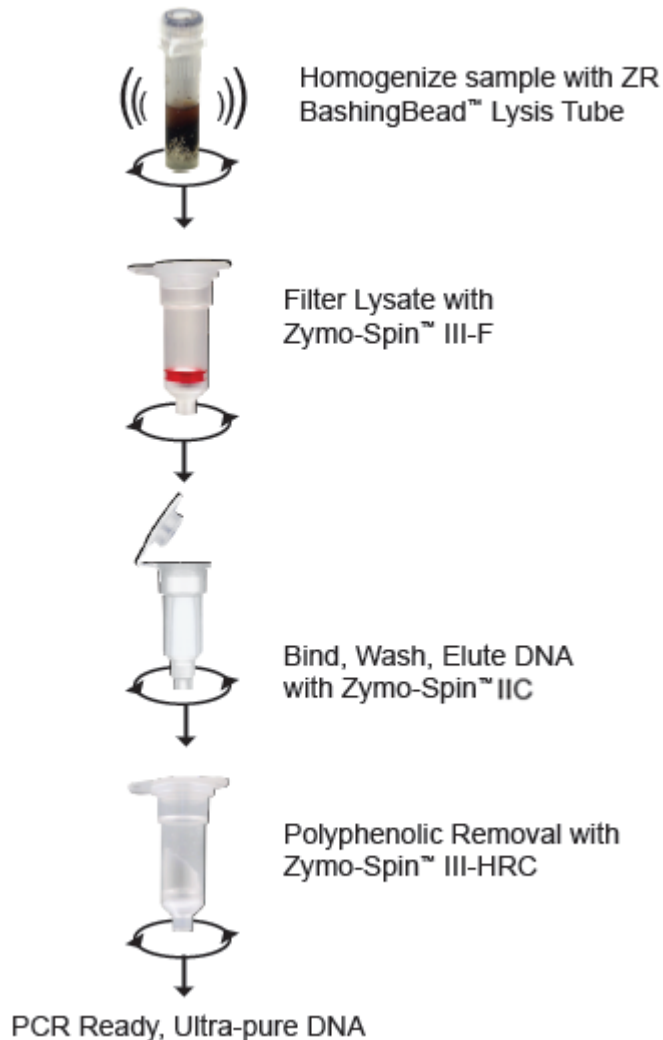
- **Format** – Bead Beating, Spin Column.
- **Sample Sources** – Up to 150 mg that include leaves, stems, buds, flowers, fruit, seeds, etc.
- **DNA Yield** – Typically 20-80 ng DNA/mg plant material.
- **DNA Purity** – High quality, inhibitor-free DNA is eluted with **DNA Elution Buffer** and is suitable for PCR amplification ($A_{260}/A_{280} > 1.8$).
- **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 (50 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.

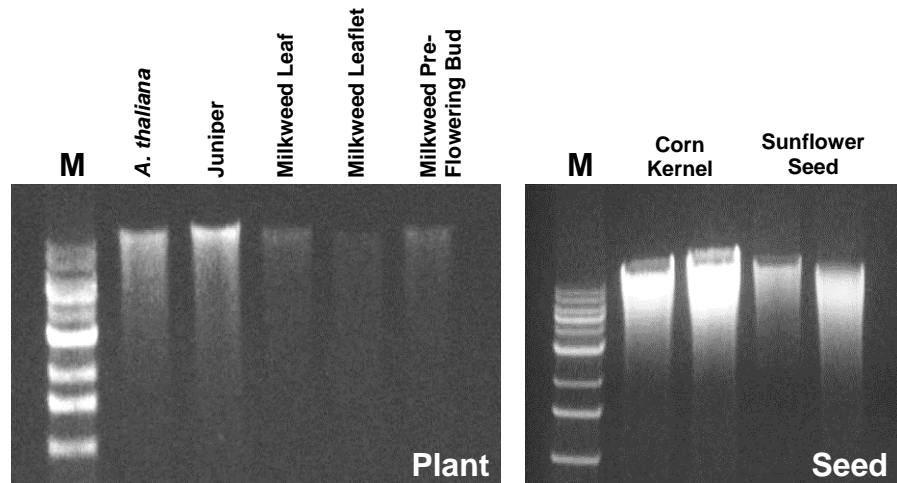
ZYMO RESEARCH CORP.

Product Description

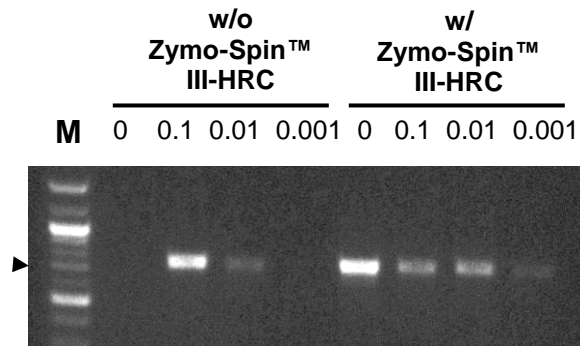
The **Quick-DNA™ Plant/Seed Miniprep Kit** is designed for the simple, rapid isolation of inhibitor-free, PCR-quality DNA from a variety of plant sample sources including leaves, stems, buds, flowers, fruit, seeds, etc. The procedure is easy and can be completed in as little as 15 minutes: plant samples (≤ 150 mg each) are added directly to a **ZR BashingBead™ Lysis Tube (2.0 mm)** and rapidly and efficiently lysed by bead beating without the use of organic denaturants or proteinases. Polysaccharides and polyphenols/tannins are removed from the DNA using our Zymo-Spin™ Technology, which includes the Zymo-Spin™ III-HRC filter, a PCR inhibitor removal column. The eluted DNA is ideal for downstream molecular-based applications including PCR, arrays, etc. A schematic of the **Quick-DNA™ Plant/Seed Miniprep Kit** procedure is shown below.



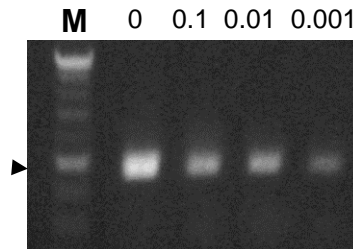
For Technical Assistance, please contact those at Zymo Research's Technical Department at 1-888-882-9682 or E-mail to tech@zymoresearch.com.



Comparison of DNA yields from various plant and seed samples using the **Quick-DNA™ Plant/Seed Kit**. Equivalent amounts of plant materials were processed with equal volumes of eluted DNA analyzed in a 0.8% (w/v) agarose/ethidium bromide gel. **M** is a 1 kb DNA size marker (Zymo Research).



PCR of diluted DNA (0 to 0.001) isolated with the **Quick-DNA™ Plant/Seed Kit** from *Arabidopsis thaliana* leaf samples demonstrates the effectiveness of the **Zymo-Spin™ III-HRC Column** at removing PCR inhibitors from the DNA. The arrow shows the relative migration of a ~700 bp amplicon from Chromosome 1 in a 0.8% (w/v) agarose/ethidium bromide gel. **M** is a 100 bp DNA size marker (Zymo Research Corp.)



PCR of diluted DNA (0 to 0.001) isolated with the **Quick-DNA™ Plant/Seed Kit** from corn kernels. The arrow shows the relative migration of a ~450 bp amplicon from mitochondrial DNA in a 0.8% (w/v) agarose/ethidium bromide gel. **M** is a 100 bp DNA size marker (Zymo Research Corp.)

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., 250 µl per 50 ml or 500 µl per 100 ml.

1. Add up to 150 mg of finely cut plant or seed sample¹ to a **ZR BashingBead™ Lysis Tube (2.0 mm)**. Add 750 µl **BashingBead™ Buffer** to the tube and cap tightly.
2. Secure in a bead beater fitted with a 2 ml tube holder assembly and process at maximum speed for ≥ 5 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) or as long as 20 minutes when using lower speeds (e.g., Disruptor Genie®).

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. Discard the Zymo-Spin™ III-F Filter.
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™ IIC Column²** 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 **g-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 (50 µl minimum) **DNA Elution Buffer** directly to the column matrix. Centrifuge at 10,000 x g for 30 seconds to elute the DNA.
11. Place a **Zymo-Spin™ III-HRC Filter** in a clean Collection Tube and add 600 µl **Prep Solution**. Centrifuge at 8,000 x g for 3 minutes.
12. Transfer the eluted DNA to a prepared Zymo-Spin™ III-HRC Spin Filter in a clean 1.5 ml microcentrifuge tube and centrifuge at exactly 16,000 x g for 3 minutes.

The filtered DNA is now suitable for PCR and other downstream applications.

¹Dried samples may be hydrated in water prior to processing to improve DNA extraction efficiency.

²The Zymo-Spin™ IIC Column has a maximum capacity of 800 µl.

Ordering Information

Product Description	Catalog No.	Kit Size
Quick-DNA™ Plant/Seed DNA Kit	D6020	50 preps.
Quick-DNA™ Plant/Seed DNA Kit	D6021	2x96 preps.

For Individual Sale	Catalog No.	Amount
ZR BashingBead™ Lysis Tubes	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
g-DNA Wash Buffer	D3004-2-50	50 ml
DNA Elution Buffer	D3004-4-10	10 ml
Prep Solution	D6035-1-30	30 ml
Zymo-Spin™ III-F Filters	C1057-50	50
Zymo-Spin™ IIC Columns	C1011-50	50
OneStep™ PCR Inhibitor Removal Kit	D6030	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 assembly from Scientific Industries, Inc. (Cat. No. S6001-2-120 from Zymo Research Corp.)

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