



ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

Peanuts

A Biotechnical Newsletter



Vol. 8 Issue 1

Increase *E. coli* Transformation

Efficiency 5 to 100 Fold

Discover ZymoBroth™ Technology

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DNA Isolation From
Tough-To-Lyse Samples

Soil, Fungi, Fecal & Plant Samples

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Our DNA Clean & Concentrators

Just Got... BIGGER!

100 µg and 500 µg Kits

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in DNA Sequencing Clean-up

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The Future of *E. coli* Transformation is... Now!

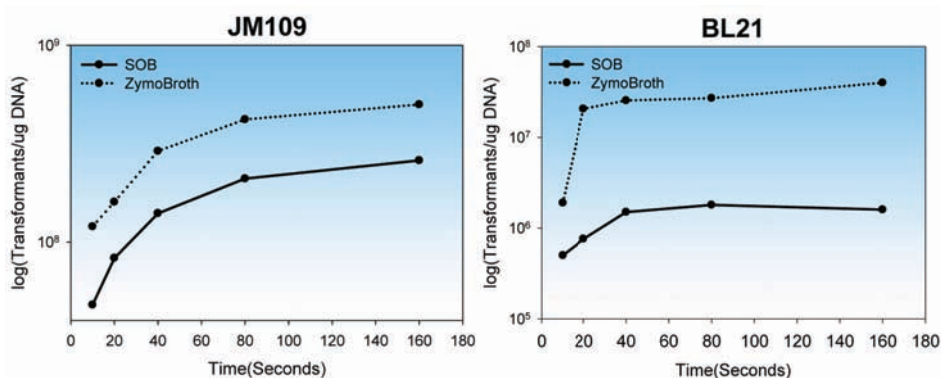
- Uniquely formulated growth medium for making highly competent *E. coli* cells.
 - No Heat Shock!
 - No Lengthy Incubations!
 - No Outgrowth Procedures!
 - No Wait!!!
- Ideal for difficult to transform *E. coli* strains including K12 and B strain derivatives.
- Premade, sterile, and ready-to-use.



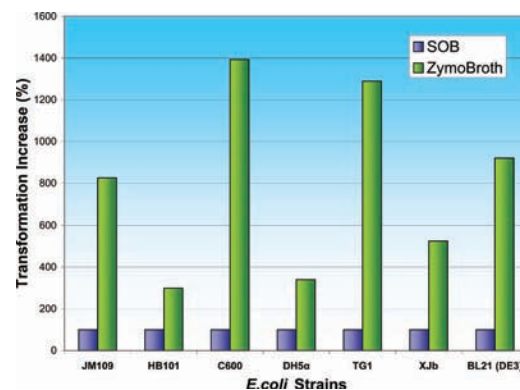
ZymoBroth™* is a specially formulated *E. coli* growth medium used for the preparation of highly competent *E. coli* cells for DNA transformation. When used instead of SOB medium, **ZymoBroth™** dramatically increases competent cell transformation efficiency by 5 to 100 fold. Also available as a component of our popular **Z-Competent™ *E. coli* Transformation Kit** (Zymo Cat. No. T3001), **ZymoBroth™** enables the

researcher to produce their own “home-made” **Z-Competent™ *E. coli*** cells that bypass the requirement of heat-shocking and related procedures. Instead, transformation can be performed by adding DNA to the **Z-Competent™** cells and the mixture spread directly to a culture plate - *Mix & Go!**

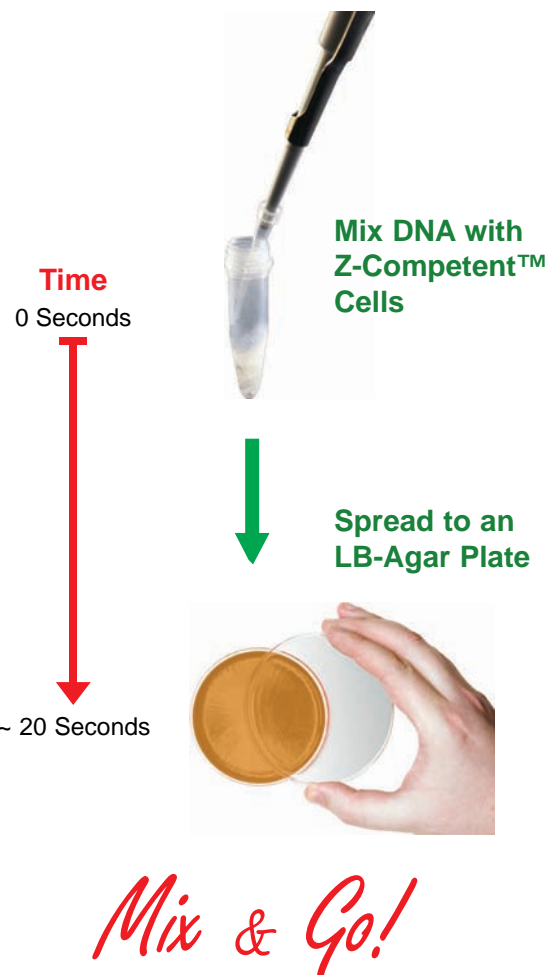
Transformation efficiencies typically range from 10^8 – 10^9 transformants/ μ g of pUC19 DNA, but can vary depending on the strain of *E. coli*. Most *E. coli* strains including K12 derivatives (such as JM109, HB101, etc.) and B strain derivatives (such as BL21, etc.) respond well to **ZymoBroth™** and demonstrate fast transformation kinetics. The figures below show the relative transformation kinetics and efficiencies for different *E. coli* strains generated using SOB and **ZymoBroth™**. Generally, **ZymoBroth™** enhances *E. coli* transformation efficiency better for strains that are difficult to transform.



Z-Competent™ *E. coli* cells prepared with ZymoBroth™ display fast transformation kinetics and high transformation efficiencies. Figures above show the transformation kinetics for **Z-Competent™** JM109 and BL21 strains of *E. coli* generated using **ZymoBroth™** and SOB growth media. PUC19 plasmid DNA was used for transformation and the data are the averages of three individual experiments.



ZymoBroth™ medium dramatically increases the transformation efficiencies of a broad range of *E. coli* strains. The figure above shows the relative transformation efficiencies for different *E. coli* strains generated using SOB or **ZymoBroth™**.



(Patent Pending)

Ordering Information

Product	Description	Cat. No.	Size	Price
ZymoBroth™	Specially formulated, sterile <i>E. coli</i> growth medium for making highly competent <i>E. coli</i> cells that do not require heat-shock for transformation.	M3015-100	100 ml bottle	\$16.00
		M3015-500	500 ml bottle	\$51.00
Z-Competent™ <i>E. coli</i> Transformation Kit	Make up to 20 ml highly competent <i>E. coli</i> . ZymoBroth™ medium is included.	T3001	20 ml	\$92.00

*For research use only. Commercial use requires licensing from Zymo Research Corp. Direct inquiries to: busdev@zymoresearch.com ** For ampicillin selection only.

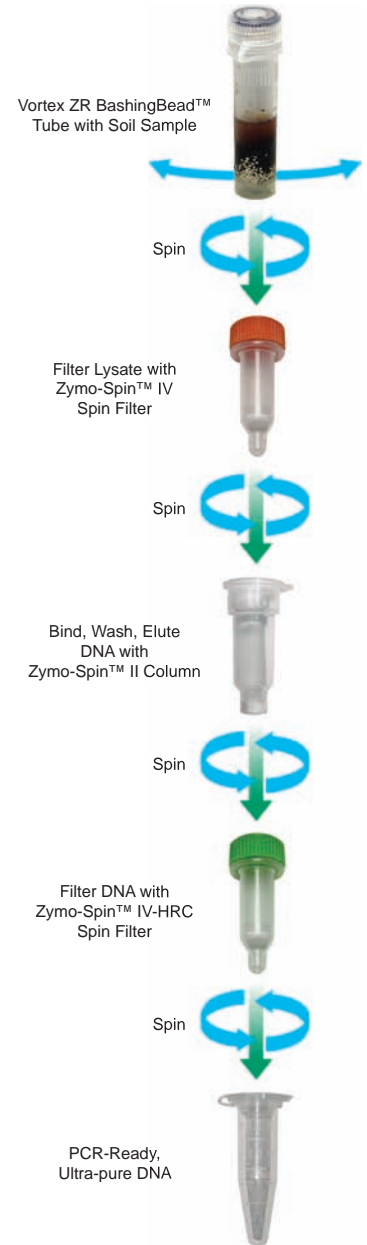
Humic-Free, PCR-Quality DNA from Soil Microbes in Minutes!

- Simple, rapid isolation of DNA from soil microorganisms including tough-to-lyse bacteria, fungi, algae, and protozoa.
- State of the art, ultra-high density BashingBeads™ are fracture resistant and chemically inert.
- Organic denaturant and proteinase K-free procedure.



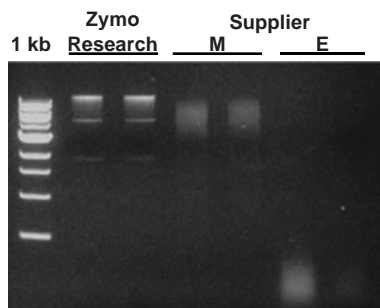
The **ZR Soil Microbe DNA Kit™** is designed for the simple, rapid isolation of humic-free, PCR-quality genomic DNA from microbes in soil. The kit can be used to successfully isolate DNA from tough-to-lyse bacteria, fungi, protozoa, and algae that inhabit a range of samples including clay, sandy, silty, 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. An overview of the procedure is shown to the right.



Comparative Overview

	ZR Soil DNA	Supplier M	Supplier 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	Fair	Low
DNA Integrity	Good	Fair	Poor
Fidelity of PCR	High	High	Low
Use of Proteases	No	No	Yes
Use of Organics	No	No	No



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 suppliers 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	Cat. No.	Size	Price
ZR Soil Microbe DNA Kit™	Simple, rapid isolation of humic-free, PCR-quality DNA from soil microbes.	D6001	50 Preps.	\$182.00

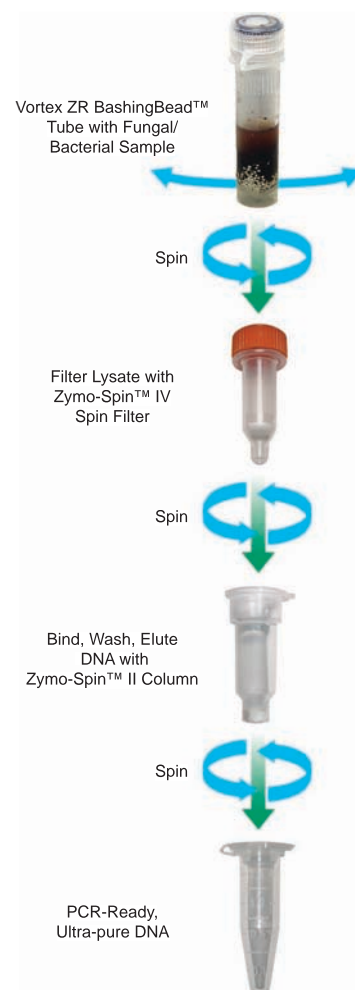
Simple, Rapid Isolation of DNA from Tough-To-Lyse Fungi and Bacteria

- Isolate PCR-quality DNA from fungi and bacteria in as little as 10 minutes.
- Efficient processing is ensured with ultra-high density BashingBeads™.
- Does not require the use of organic denaturants or lytic enzymes (e.g., Zymolyase).



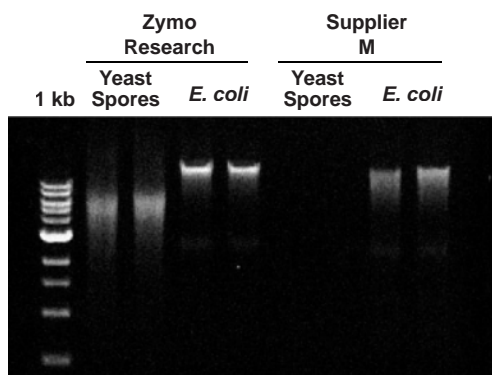
The **ZR Fungal/Bacterial DNA Kit™** is designed for the simple, rapid isolation of DNA from tough-to-lyse fungi, including *A. fumigatus*, *C. albicans*, *N. crassa*, *S. cerevisiae*, *S. pombe*, as well as from mycelium and Gram (+) and (-) bacteria.

The procedure is easy and can be completed in as little as ten minutes. Fungal and/or bacterial samples are added directly to a **ZR BashingBead™ Lysis Tube** then are rapidly and efficiently lysed without using organic denaturants or proteases. 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 Kit™** procedure is shown to the right.

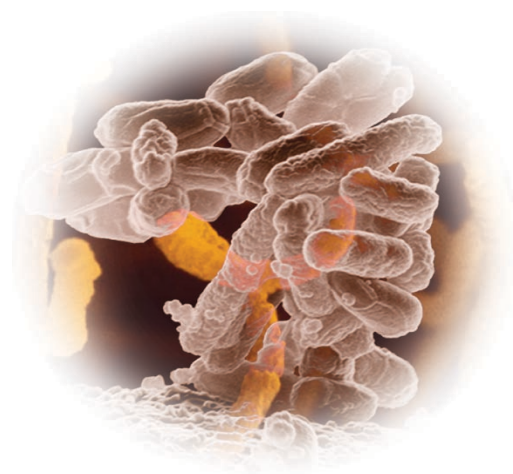


Comparative Overview

	ZR Fungal/Bacterial DNA	Supplier M	Supplier Q
Processing Time	10-15 minutes	40-50 minutes	> 3 hours
DNA Recovery	High	High	Fair
DNA Integrity	Good	Fair	Fair
Fidelity of PCR	High	Fair	Fair
Use of Proteases	No	No	Yes



DNA isolated from *Saccharomyces cerevisiae* (spores) and *E. coli* using the **ZR Fungal/Bacterial DNA Kit™** is high quality and structurally intact. Equivalent amounts of yeast and bacteria were processed using the **ZR Fungal/Bacterial DNA Kit™** 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 is a 1 kb ladder (Zymo Research).



Ordering Information

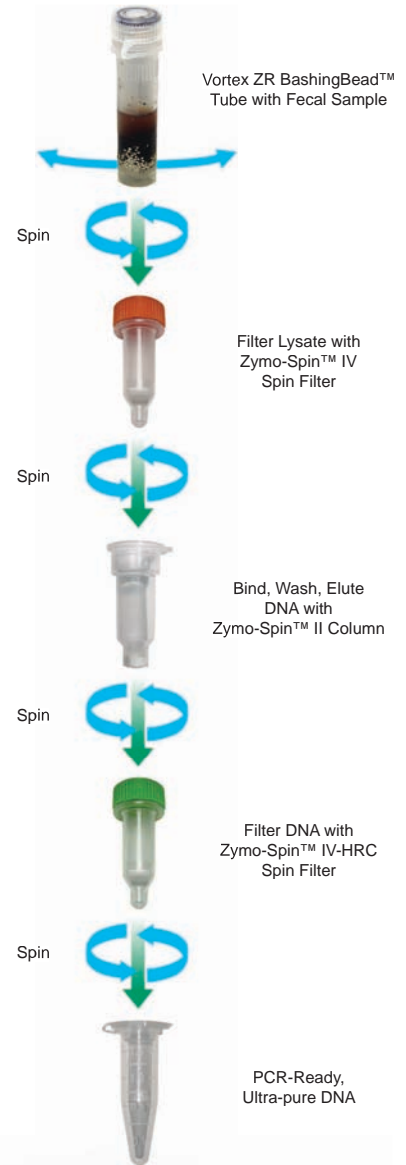
Product	Description	Cat. No.	Size	Price
ZR Fungal/Bacterial DNA Kit™	Simple, rapid isolation of PCR-quality genomic DNA from fungi and/or bacteria.	D6005	50 Preps.	\$132.00

PCR-Quality DNA from Fecal Samples in as Little as 10 Minutes Without the Mess!

- Simple isolation of inhibitor-free, PCR-quality DNA from fecal samples.
- DNA is efficiently isolated from a variety of sample sources including humans, birds, rats, mice, cattle, etc.

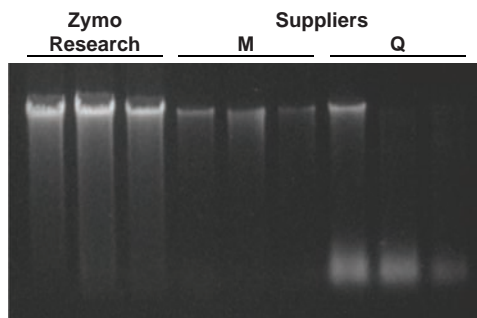


The **ZR Fecal DNA Kit™** is designed to isolate inhibitor-free, PCR-quality DNA from a variety of sample sources including humans, birds, rats, mice, cattle, etc. The procedure is easy and can be completed in as little as 10 minutes. Fecal samples (≤ 150 mg each) are added directly to a **ZR BashingBead™ Lysis Tube** and rapidly and efficiently lysed without the use of organic denaturants or proteases. The DNA is then isolated and purified using our *Fast-Spin* column technology and is ideal for downstream molecular-based applications including PCR, arrays, etc. The DNA is also well suited for methylation profiling purposes using any of our **EZ DNA Methylation Kits**. A schematic of the ZR Fecal DNA Kit™ procedure is shown to the right.



Comparative Overview

	ZR Fecal DNA	Supplier M	Supplier Q
Processing Time	10-15 minutes	40-50 minutes	40-50 minutes
DNA Yield	High	Fair	Low
DNA Integrity	Good	Fair	Poor
Fidelity of PCR	High	High	Fair
Use of Proteases	No	No	Yes
Use of Organic Denaturants	No	No	No



Comparison of DNA yields from rat feces using the **ZR Fecal DNA Kit™** and kits from suppliers M and Q. Equivalent amounts of feces were processed using each kit and then equal volumes of eluted DNA were analyzed in a 0.8% (w/v) agarose/ethidium bromide gel. Samples were processed in triplicate.



Ordering Information

Product	Description	Cat. No.	Size	Price
ZR Fecal DNA Kit™	Simple, rapid isolation of PCR-quality DNA from fecal samples.	D6010	50 Preps.	\$182.00

Ultra-Pure, High-Yield Isolation of DNA from Tough-to-Lyse Microorganisms in Minutes Using State of the Art BashingBead™ Technology

- Efficient DNA Isolation from a Variety of Organisms Including: Fungi, Bacteria, Algae and Protists
- Ideal for Use in Agricultural, Forensic, Environmental, & Microbiology-Based Applications

Isolate PCR-ready DNA from tough-to-lyse microorganisms directly or from microorganisms that inhabit soil, sludge, sediment or fecal samples in 10-15 minutes using our new **ZR Soil Microbe DNA Kit™**, **ZR Fungal/Bacterial DNA Kit™**, or **ZR Soil Microbe DNA Kit™** (see application guide below). For processing, samples are simply transferred to the provided **BashingBead™ Lysis Tubes** where microbes are rapidly and efficiently lysed by bead beating in uniquely designed lysis buffers. The tubes can be used in *any* bead mill (e.g., Disruptor Genie®, pulveriser, or vortex that can accommodate standard 2.0 ml tubes. *Fast-Spin* column technology is then used to isolate the DNA which is subsequently filtered to remove humic/fulvic acids or polyphenols that inhibit PCR. Our kits outperform the competition in value, quality as well as in DNA yield and PCR-ability (see preceding pages), which is due in part to the state of the art, ultra-high density **BashingBeads™**.

SPECIAL OFFER*

Receive a **FREE** **Disruptor Genie®** (Cat. # S6001-2) with an order of any 5 BashingBead™ Kits (D6001, D6005, D6010)

*Offer good for a limited time only.



	ZR Soil Microbe DNA Kit™	ZR Fungal/Bacterial DNA Kit™	ZR Fecal DNA Kit™
Environmental Sources			
Soil	●		
Sediment	●		
Sludge	●		
Feces (manure)			●
Microorganisms			
Bacteria	●	●	●
<i>Gram (+)</i>	●	●	●
<i>Gram (-)</i>	●	●	●
Fungi	●	●	●
<i>Unicellular (Yeast)</i>	●	●	●
<i>Filamentous</i>	●	●	●
Algae	●	●	●
<i>Unicellular</i>	●	●	●
<i>Filamentous</i>	●	●	●
Protist	●	●	●
PCR Inhibitor Removal			
Removal of Humic, Fulvic, and Polyphenolic Substances	●		●



BashingBeads™

Each impact resistant 2.0 ml tube contains 0.7 ml dry volume (lysis buffer is not included) of either 0.5 mm or 2.0 mm **BashingBead™** lysis matrix. These state of the art, ultra-high density beads are fracture resistant, chemically inert and ideal for disrupting tough-to-lyse biological samples. Featured in the **ZR Soil Microbe DNA Kit™**, **ZR Fungal/Bacterial Kit™** and the **ZR Fecal DNA Kit™**. Beads for bulk ordering or OEM purposes are available upon request. Please send your inquiries to: busdev@zymoresearch.com.

Cat. No.	Qty.	Description	Size	Price
S6002-50	50 tubes	Application: Fungi, Agae, Bacteria, Protist, etc.	0.5 mm	\$92.00
S6003-50	50 tubes	Application: Plants, Seeds, Tissues, Insects, etc.	2.0 mm	\$92.00
S6001-2	1 unit	Disruptor Genie®	2.0 ml	\$425.00
S6004-1	1 unit	TurboMix 1.5 ml tube holder conversion attachment.	1.5 ml	\$152.00
S6004-2	1 unit	TurboMix 2.0 ml tube holder conversion attachment.	2.0 ml	\$172.00



PCR Quality DNA from Plants and Seeds in Minutes Without the Use of Freezing/Grinding, Proteinase K, or CTAB!

- Rapid method for the isolation of inhibitor-free, PCR-quality DNA from a variety of plant and seed samples 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, pulverizer, or vortex that can accommodate standard 2 ml tubes.



The **ZR Plant/Seed DNA 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 are added directly to a **ZR BashingBead™ Lysis Tube** and rapidly and efficiently lysed without using conventional freezing/grinding, proteinase K, or CTAB treatments. Polysaccharides and polyphenols/tannins are removed from the DNA using our *Fast-Spin* column and **Zymo-Spin™ IV-HRC Column** technologies, respectively. The eluted DNA is ideal for downstream molecular-based applications including PCR, arrays, etc. A schematic of the **ZR Plant/Seed DNA Kit™** procedure is shown to the right.

Comparative Overview (Single Column Format)

	ZR Plant/Seed DNA Kit™	Supplier Q	Supplier MN
Processing Time	15 min.	> 1 hr.	> 1 hr.
Protocol	Simple (8 Step)	Extensive	Extensive
DNA Yield	High	Low	Fair
DNA Integrity	High	Fair	Fair
Fidelity of PCR	High	Low	Fair
Use of Proteases	No	Optional	No

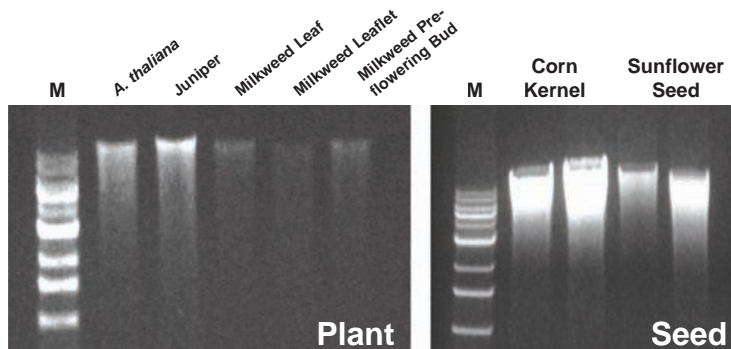
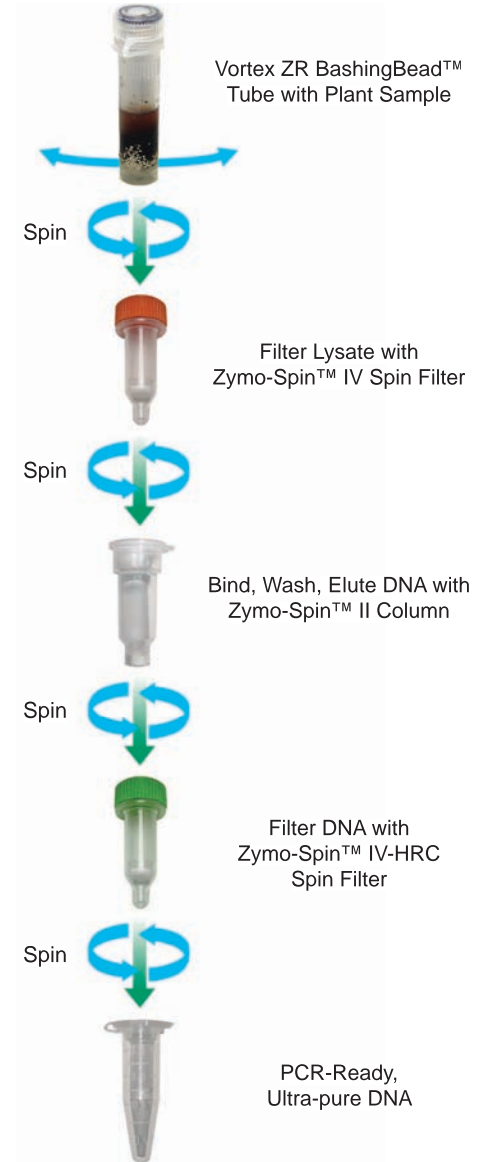


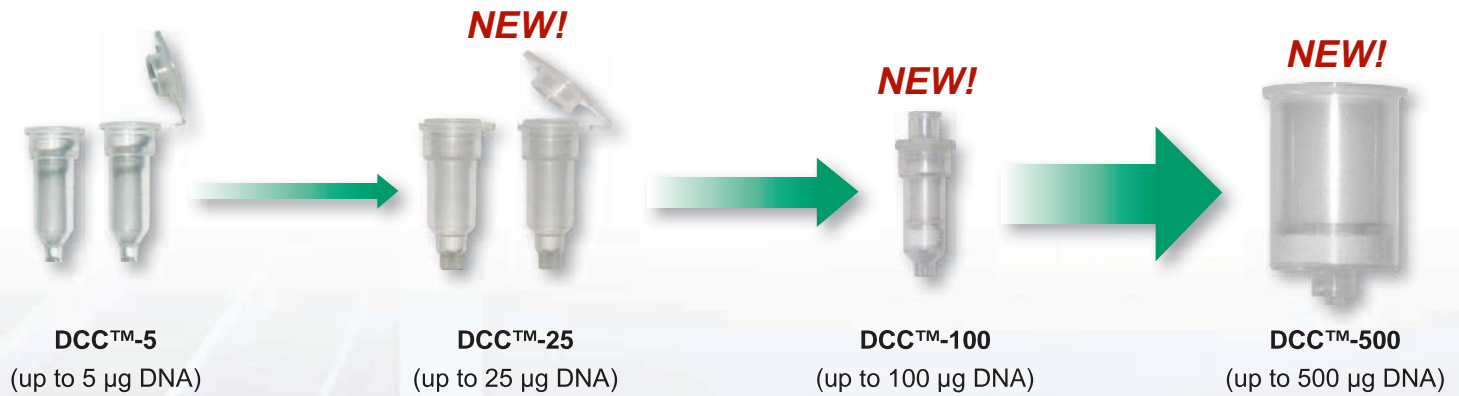
Figure 1. Comparison of DNA yields from various plant and seed samples using the **ZR Plant/Seed DNA Kit™**. Equivalent amounts of plant materials were processed with equal volumes of eluted DNA analyzed in a 0.8% (w/v) agarose/ethidium bromide gel. M is a 1 kb DNA size marker (Zymo Research Corp.).



Ordering Information

Product	Description	Cat. No.	Size	Price
ZR Plant/Seed DNA Kit™	Isolation of PCR-quality DNA from plant and seed samples.	D6020	50 Preps	\$182.00

Our DNA Clean & Concentrator Columns Just got... *BIGGER!*



NEW! DNA Clean & Concentrators Feature...

- Increased DNA clean-up and concentration capacities of 25 to 500 µg.
- Uniquely designed columns conveniently adapt to syringes, vacuum manifolds, and centrifuges.
- Fast and easy processing of large volume samples.
- Eluted DNA is high quality and concentrated making it ideal for PCR, arrays, nucleotide blotting, transfection, etc.

Zymo Research pioneered rapid, efficient DNA clean-up and concentration with the introduction of its **DNA Clean & Concentrator™ (DCC™)** product line. Since its inception, the **DCC™** family of products has evolved into one of the most efficient and versatile methods for concentrating DNA from a range of sample sources into minimal elution volumes (i.e., $\geq 6 \mu\text{l}$). DNA is effectively desalted and concentrated from PCR, endonuclease digestions, DNA modification reactions, isotope/fluorescence labeling reactions, etc. The **DCC™** products facilitate the removal of DNA polymerases, modifying enzymes, RNA polymerases, ligases, kinases, nucleases, phosphatases, and restriction endonucleases, as well as free dNTPs and their analogs including radiolabeled and fluorescent derivatives. DNA recovered and concentrated using the **DCC™** is ideal for use in subsequent sequencing, cloning, ligation, microarray, and endonuclease digestion procedures.

The **DNA Clean & Concentrator™-100** and **-500** are two new additions to the DNA Clean & Concentrator™ line that provide researchers more versatility when purifying 25 to 500 µg from large volume samples. In addition, the **DCC™-25** features a brand new column design.

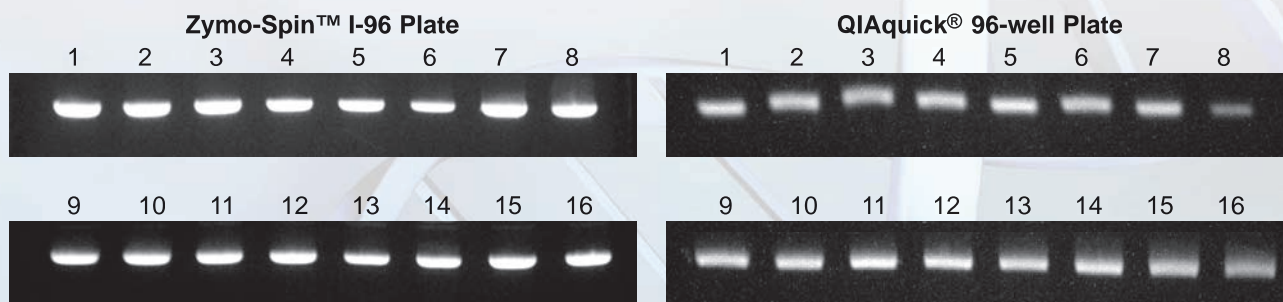
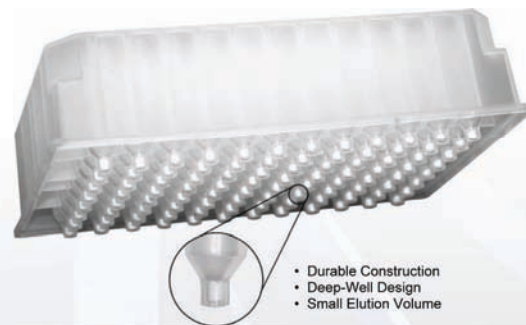
Typical DCC™ Applications

- **DNA from PCR:** Efficient desalting of DNA with the removal of DNA polymerases, primers, and free dNTPs.
- **DNA From Enzymatic Reactions:** Efficient desalting of DNA with the removal of DNA polymerases, modifying enzymes, RNA polymerases, ligases, kinases, nucleases, phosphatases, endonucleases, etc.
- **cDNA:** Efficiently purifies DNA following RT, either as a DNA/RNA complex or as single stranded cDNA following chemical hydrolysis of the RNA template.
- **Plasmid DNA:** The **DCC™** can be used to purify plasmid DNA from cell-free lysates from "home-made" preparations or from commercial kits. Plasmid DNA purified and concentrated using the **DCC™** has proven an excellent substrate for high quality DNA sequencing.
- **Isotope and Dye Removal:** The **DCC™** efficiently removes unincorporated fluorescent (i.e., AMCA, FITC, BIO, DIG, Cy3, Cy5, FAME, etc.) and radiolabeled dNTP derivatives from DNA following *in vitro* labeling reactions.
- **M13 ssDNA:** The **DCC™** can be used for the rapid isolation of single stranded M13 phage DNA directly from phage-infected *E. coli* culture supernatant.

Continuing to Meet All Your DNA Clean-up and Concentration Needs

Imagine... Zymo-Spin™ I columns in a 96-well plate format!

Introducing Zymo Research's **ZR-96 DNA Clean & Concentrator™-5**. A hassle-free method for the rapid, large-scale (96 sample) purification and concentration of high-quality DNA (5 µg DNA/well) from PCR samples, endonuclease digestions, or "crude" plasmid preparations. The figure to the right highlights the design features of the **Zymo-Spin™ I-96 Plate**.



The innovative design of the **Zymo-Spin™ I-96 Plate** makes it outperform the competition! Plasmid DNA (i.e., pUC19 ~ 2.7 kb) was purified using either the **Zymo-Spin™ I-96 Plate** or the **QIAquick® 96-well Plate** according to centrifuge and vacuum-based protocols, respectively. Following elution of the DNA into a 96-well collection plate, sixteen random wells were chosen from each plate for analysis. In each case, 1/3 of the eluted DNA samples were analyzed per lane in a 0.8% (w/v) agarose gel. A comparison of band intensities for the supercoiled DNA samples clearly demonstrate the higher efficiency and consistency of DNA purification/concentration when using the Zymo product.

QIAquick® is a registered trademark of Qiagen Corporation.

Ordering Information				
Product	Description	Cat. No.	Size	Price
DNA Clean & Concentrator™-5 Kit	Clean and concentrate ≤ 5 µg of DNA from any reaction or "crude" preparation in as little as 2 minutes (≥ 6 µl elution volume allows for highly concentrated DNA).	D4003	50 Uncapped Preps.	\$62.00
		D4004	200 Uncapped Preps.	\$220.00
		D4013	50 Capped Preps.	\$62.00
		D4014	200 Capped Preps.	\$220.00
ZR-96 DNA Clean & Concentrator™-5 Kit	High-throughput (96-well) recovery of ≤ 5 µg (per well) of DNA from PCR, endonuclease digestions, plasmid preparations, etc. 10-15 µl minimal elution volume allows for highly concentrated DNA.	D4023	2x96-Well Plates	\$180.00
		D4024	4x96-Well Plates	\$350.00
NEW! DNA Clean & Concentrator™-25 Kit	Clean and concentrate ≤ 25 µg of DNA from any reaction or "crude" preparation in 2 minutes (≥ 25 µl elution volume allows for highly concentrated DNA).	D4005	50 Uncapped Preps.	\$62.00
		D4006	200 Uncapped Preps.	\$220.00
		D4033	50 Capped Preps.	\$62.00
		D4034	200 Capped Preps.	\$220.00
NEW! DNA Clean & Concentrator™-100 Kit	Clean and concentrate ≤ 100 µg of DNA from any reaction or "crude" preparation in minutes (≥ 100 µl elution volume allows for highly concentrated DNA).	D4029	25 Preps.	\$82.00
		D4030	50 Preps.	\$142.00
NEW! DNA Clean & Concentrator™-500 Kit	Clean and concentrate ≤ 500 µg of DNA from any reaction or "crude" preparation in minutes (≥ 1 ml elution volume allows for highly concentrated DNA).	D4031	10 Preps.	\$62.00
		D4032	20 Preps.	\$110.00

Uncapped Prep.



Capped Prep.



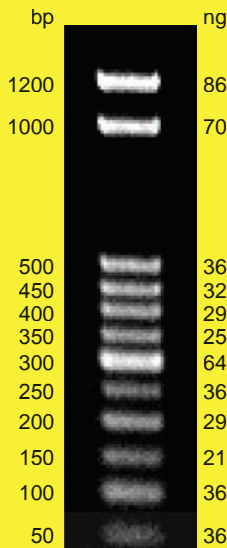
Need a Ladder?



Precision DNA Size Determination with Zymo Research's DNA Molecular Weight Markers

The **ZR DNA Markers™** are created as defined size fragments that encompass a range from 50 bp to 10 kb. This makes DNA size approximation easy for both PCR products as well as plasmid DNAs. The **ZR 50 bp DNA Marker™**, ranging from 50 bp to 1200 bp, is well within the common range of PCR generated DNA fragments. For larger DNAs, the **ZR 100 bp DNA Marker™** and **ZR 1 kb DNA Marker™** are appropriate. Each marker comes with product information detailing the product and its application.

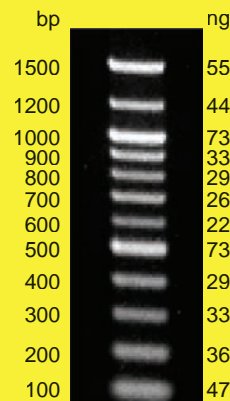
ZR 50 bp DNA Marker™



500 ng of the ZR 50 bp DNA Marker™ separated in a 1.8% w/v agarose/EtBr/TAE gel.

The **50 bp DNA marker** consists of plasmid DNA that has been digested with endonucleases to yield 12 defined fragments that range in size from 50 - 1200 bp. The intensity of the 300 bp band is increased as an identifier.

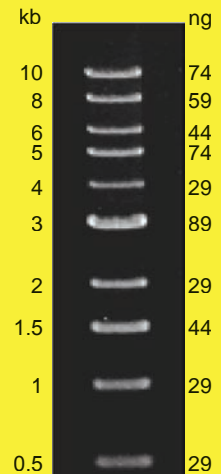
ZR 100 bp DNA Marker™



500 ng of the ZR 100 bp DNA Marker™ separated in a 1.5% w/v agarose/EtBr/TAE gel.

The **100 bp DNA marker** consists of plasmid DNA that has been digested with endonucleases to yield 12 defined fragments that range in size from 100 - 1500 bp. The intensity of the 500 and 1000 bp bands are increased as identifiers.

ZR 1 kb DNA Marker™



500 ng of the ZR 1 kb DNA Marker™ separated in a 0.8% w/v agarose/EtBr/TAE gel.

The **1 kb DNA marker** consists of plasmid DNA that has been digested with endonucleases to yield 10 defined fragments that range in size from 0.5 - 10 kb. The intensity of the 3 kb band is increased as an identifier.

ZR 50 bp, 100 bp & 1 kb DNA Markers™

Ordering Information			
Cat. No.	Ladder Size	Amount	Price
M5001-50	50 bp	50 µg/100 µl	\$50.00
M5001-200	50 bp	200 µg/400 µl	\$150.00
M5002-50	100 bp	50 µg/100 µl	\$50.00
M5002-200	100 bp	200 µg/400 µl	\$150.00
M5003-50	1 kb	50 µg/100 µl	\$50.00
M5003-200	1 kb	200 µg/400 µl	\$150.00

Ready-to-Load ZR 50 bp, 100 bp & 1 kb DNA Markers™

Ordering Information			
Cat. No.	Ladder Size	Amount	Price
M5004-50	50 bp	50 µg/600 µl (100 Loadings)	\$55.00
M5005-50	100 bp	50 µg/600 µl (100 Loadings)	\$55.00
M5006-50	1 kb	50 µg/600 µl (100 Loadings)	\$55.00

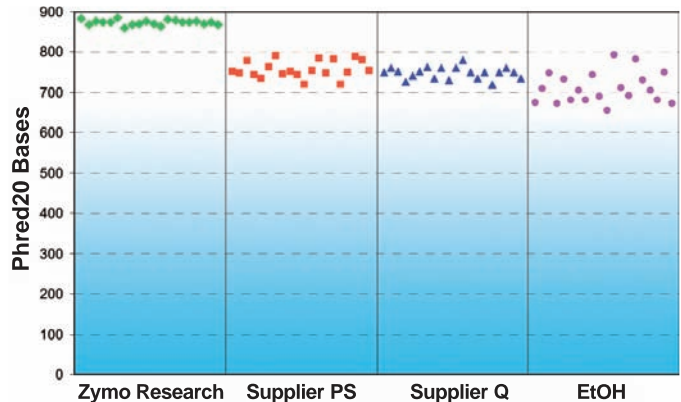
* All Ready-to-Load Markers contain Xylene Cyanol FF and Orange G dyes.

We Want Your Help in Evaluating the Next Generation of DNA Sequencing Clean-up Procedures

- Simple 2 Minute Bind, Wash, Elute Procedure with no drying steps required.
- Reusable spin columns and 96-well filtration plates support both gel and capillary electrophoresis platforms.
- Complete elimination of “dye blobs” with high quality Phred scores and long read lengths.

We Would Like to Hear Your Input!

To participate please call 1-888-882-9682 or visit www.zymoresearch.com for information on receiving a 50 column or 2x96-well plate sample for evaluation. Let's discuss your thoughts about the product over a cup of coffee. In appreciation for your time and feedback, you will receive a complimentary Starbucks Coffee card valued at \$10.



Phred20 scores obtained with the ZR DNA Sequencing Clean-up Kit™ are consistently higher than those of other suppliers and ethanol precipitation procedures. DNA samples were labeled using the BigDye Terminator Cycle Sequencing Kit then sequenced using an ABI 3730xl DNA Analyzer.



Single Column



96-well Plate

Look!

... for the release of our new **Pellet-Free™ Zyppy™ Plasmid Miniprep & Midiprep Kits**

Plasmid DNA Purification Directly from Culture

- **Pellet-Free™** procedure* omits conventional cell-pelleting and resuspension steps.
- The fastest, simplest procedure for purifying the highest quality plasmid DNA.
- Innovative colored buffers* for error-free visual identification of complete bacterial cell lysis and neutralization.

Add Lysis Buffer Directly to Bacterial Culture



* Pellet-Free™ and colored buffer plasmid purification technologies are patent pending.

Disclaimer - The Polymerase Chain Reaction (PCR) process is covered by U.S. Patent: #4,683,195;4,683,202 assigned to Hoffmann-La Roche. Patents pending in other countries. Disruptor Genie® is a registered trademark of Scientific Industries, Inc. DH5α is a trademark of Invitrogen Corp. QIAquick® is a registered trademark of Qiagen Corp. Patents Pending: Zyppy™ Plasmid Miniprep, Zyppy™ Plasmid Midiprep, Zyppy™ Plasmid Maxiprep (including Pellet-Free™ and colored buffer technologies) and ZymoBroth™. This newsletter was produced in association with BioMark.



DNA Transformation in **20 seconds** Without Heat Shock!

Mix & Go!

See inside for details...



ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

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