ZYMO RESEARCH
The Beauty of Science is to Make Things Simple

DNA Purification *Made Simple*™

INSTRUCTION MANUAL

Quick-gDNA™ MiniPrep

Catalog Nos. **D3006, D3007, D3024,** & **D3025**

Highlights

- Quick purification of high quality DNA from whole blood, plasma, serum, body fluids, buffy coat, lymphocytes, swabs or cultured cells in less than 15 minutes using innovative *Clean-Spin*™ column technology.
- Compatible with commonly used anticoagulants (i.e., EDTA, heparin, citrate).
- Unique extraction technology excludes the use of Proteinase K and organic denaturants.
- Isolated DNA is ideal for PCR, endonuclease digestion, bisulfite conversion/methylation detection, sequencing, genotyping, etc.

Contents

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Satisfaction of all Zymo Research products is guaranteed. If you are not satisfied with this product please call 1-888-882-9682.

Product Contents

***Quick-gDNA*™ MiniPrep** (Kit Size)	**D3006** (uncapped) **D3024** (capped) (50 Preps.)	**D3007** (uncapped) **D3025** (capped) (200 Preps.)	**Storage Temperature**
Genomic Lysis Buffer*	50 ml	2 x 100 ml	Room Temp.
DNA Pre-Wash Buffer**	15 ml	50 ml	Room Temp.
g-DNA Wash Buffer	50 ml	100 ml	Room Temp.
DNA Elution Buffer	10 ml	2 x 10 ml	Room Temp.
Zymo-Spin™ Columns***	50	200	Room Temp.
Collection Tubes	100	400	Room Temp.
Instruction Manual	1	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.

* *Recommended*: Add beta-mercaptoethanol to 0.5%(v/v) i.e., 250 µl per 50 ml *or* 500 µl per 100 ml.

** 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.

*** Kits **D3006** and **D3007** are supplied with uncapped columns (**Zymo-Spin™ IIN**), whereas kits **D3024** and **D3025** are supplied with capped columns (**Zymo-Spin™ IIC**).

Specifications

- **Sample Sources** – Whole blood, plasma, or serum from humans, mice, rats, etc. Also, cells from culture, buccal cells, as well as a variety of biological liquids are effectively processed using this kit. Tissue already digested with Proteinase K or mechanically homogenized can also be processed.
- **Workflow Overview** – Unique lysis buffer system omits the need for Proteinase K digestion for biological fluids and cell culture samples.
- **DNA Purity** – High-quality DNA is eluted with **DNA Elution Buffer** or water. DNA is especially well suited for PCR and other downstream applications. 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** – Up to 25 µg total DNA is eluted into ≥50 µl (30 µl minimum) **DNA Elution Buffer** or water. Human whole blood will typically yield 3-7 µg DNA per 100 µl blood sampled. Mammalian tissues already homogenized yield: 1-3 µg DNA per mg skeletal, heart, and brain tissues and 3-5 µg DNA per mg liver, kidney and lung tissues.
- **Product Detergent Tolerance** – ≤5% Triton X-100, ≤5% Tween-20, ≤5% Sarkosyl, ≤0.1% SDS.
- **Equipment** – microcentrifuge, vortex

For DNA isolation from biological fluids, cell cultures, and solid tissues utilizing Proteinase K, use the ***Quick*-DNA™ Universal Kit** (D4068, D4069).

For high-throughput purification (96-well, 5 µg DNA/well), use the:

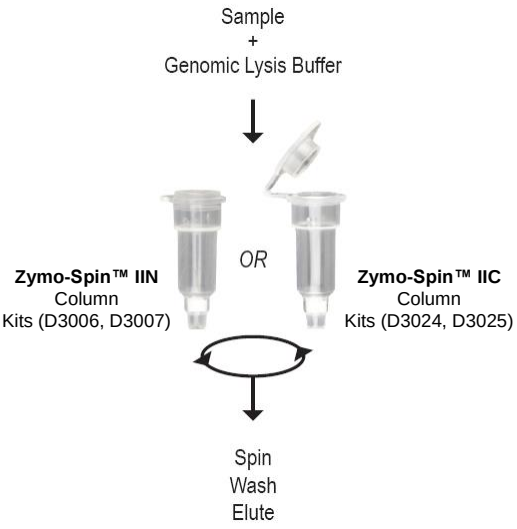
- **ZR-96 *Quick-gDNA*™** (D3010, D3011, D3012) for blood and cells.
- ***Quick*-DNA™ Universal 96 Kit** (D4070, D4071) for biological fluids, cell cultures, and solid tissues.

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.

Product Description

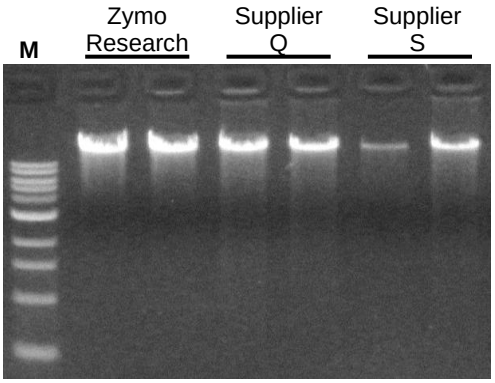
The ***Quick-gDNA™* MiniPrep** is a simple procedure for the rapid isolation of total DNA (e.g., genomic, mitochondrial, viral) from a variety of biological sample sources. This product has been optimized for maximal recovery of ultra-pure DNA without RNA contamination and is compatible with whole blood (fresh or stored), serum, plasma, buffy coat, buccal cells, cells from culture, and many biological liquid samples.

For processing, simply add the specially formulated **Genomic Lysis Buffer** to a sample, vortex, and transfer the mixture to the supplied **Zymo-Spin™ Column**. There is no need for organic denaturants or Proteinase K digestion because of the unique lysis buffer system. The product features *Clean-Spin*™ technology to yield high-quality, purified DNA in just minutes (see below). PCR inhibitors are effectively removed during the purification process. DNA purified using the ***Quick-gDNA*™ MiniPrep** is suitable for PCR, nucleotide blotting, DNA sequencing, restriction endonuclease digestion, bisulfite conversion/methylation analysis, and other downstream applications.



Ultra-pure DNA is ideal for…

- ✓ PCR
- ✓ Endonuclease Digestion
- ✓ Genotyping
- ✓ Bisulfite Conversion & Methylation Analysis



High yield/quality DNA is successfully isolated from porcine whole blood using the ***Quick-gDNA*™ MiniPrep** (D3024). Equivalent amounts (100 µl) of blood were processed without Proteinase K using the ***Quick-gDNA*™ MiniPrep** in half the time as compared to the kits from suppliers Q and S. Equal volumes of eluted DNA were then analyzed (in duplicate) in a 0.8% (w/v) TAE/agarose/ethidium bromide gel. The size marker "M" is a 1 kb ladder (Zymo Research).

For routine plasmid DNA purification from *E. coli*, Zymo Research offers the **Zyppy™ Plasmid Miniprep Kit** (D4036) and the **ZymoPURE™ Midi, Maxi,** and **Gigaprep Kits** (D4200, D4202, and D4204).

Zymo Research offers the **EZ DNA Methylation-Lightning™ Kit** (D5030, D5031) for rapid, precise DNA methylation detection and a comprehensive selection of other epigenetic tools.

Looking to isolate RNA? For RNA isolation from TRIzol®, the **Direct-zol™ RNA Kits** (R2050, R2051, R2052, R2053) offer total RNA purification without phase separation in only 7 minutes!

For **Technical Assistance**, please contact 1-888-882-9682 or E-mail tech@zymoresearch.com.

Buffer Preparation

✓ *Recommended*: 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.

PROTOCOLS

Whole Blood, Serum, and Plasma Samples

The following is for the purification of DNA from 100 µl whole blood, serum or plasma (the volumes can be adjusted up to 200 µl (max.) depending on your requirements). Fresh, frozen, or preserved blood (in EDTA, citrate, or heparin) can be used. If material cannot be processed immediately, the sample can be "stabilized" for later processing (as noted below) although the immediate processing of blood samples is recommended.

1. Add 400 µl of **Genomic Lysis Buffer** to 100 µl of blood, serum, or plasma (4:1). Mix completely by vortexing 4-6 seconds, then let stand 5-10 minutes at room temperature.

   Note: Add 200 µl Genomic Lysis Buffer to all samples <50 µl. For samples larger than 50 µl, add a proportional amount (4:1) of Genomic Lysis Buffer (e.g., Add 800 µl Genomic Lysis Buffer to 200 µl blood).

For the inclusion of small DNAs from serum, add 0.3 volumes isopropanol to the mixture. (*For example, to a 1 ml mixture of serum and Genomic Lysis Buffer add 300 µl isopropanol.*)

2. Transfer the mixture to a **Zymo-Spin™ Column** in a **Collection Tube**. Centrifuge at 10,000 *x g* for one minute. Discard the **Collection Tube** with the flow through.

The column capacity is ~1 ml.

3. Transfer the **Zymo-Spin™ Column** to a new **Collection Tube**. Add 200 µl of **DNA Pre-Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

4. Add 500 µl of **g-DNA Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

5. Transfer the spin column to a clean microcentrifuge tube. Add ≥50 µl **DNA Elution Buffer** or water to the spin column. Incubate 2-5 minutes at room temperature and then centrifuge at top speed for 30 seconds to elute the DNA. The eluted DNA can be used immediately for molecular based applications or stored ≤-20ºC for future use.

Elution of DNA from the column is dependent on pH and temperature. If water is used, ensure the pH is >6.0. Also, the total yield may be improved by eluting the DNA with Elution Buffer or water pre-equilibrated to 60-70ºC.

Delayed Processing (*Stabilization*) of Blood Samples: The immediate processing of blood with this kit is recommended. However, if blood cannot be processed immediately, samples can be "stabilized" in **Genomic Lysis Buffer** for processing at a later time. To do this, add *four* volumes of **Genomic Lysis Buffer** to *each* volume of whole blood (4:1), then vortex. Blood samples mixed with **Genomic Lysis Buffer** can be stored at room temperature for 1-2 weeks, 0-4ºC for 1-2 months, -20ºC for 6 months to a year, or <-70ºC for many years. Samples stored at ≤4ºC should reach room temperature prior to processing. Begin at Step 2 in the standard protocol (above) when purifying DNA from blood samples stabilized in **Genomic Lysis Buffer**.

Buccal Cells and Swabs

Buccal cells can be isolated using a rinse- or swab-based isolation method.

A. **Rinse Method**: Vigorously rinse 10-20 ml of saline solution or mouthwash orally for 30 seconds. The more vigorous the rinsing action, the more cells that will be recovered. Spit the saline into a 50 ml tube and pellet the cells at 1,500 rpm for 5 minutes. Discard the supernatant without disturbing the cell pellet. Add 500 µl of **Genomic Lysis Buffer** to the pellet then vortex 4-6 seconds, then let stand at room temperature for 5-10 minutes.

B. **Swab Isolation Method**: Thoroughly rinse mouth out before isolating cells. Brush the inside of the cheek with a *buccal swab* for 15 seconds (approximately 20 brushes), making sure to cover the entire area of the inner cheek. Rinse the brush into a microcentrifuge tube using 500 µl of **Genomic Lysis Buffer**, vortex 4-6 seconds, and then let stand at room temperature for 5-10 minutes.

1. Transfer the mixture to a **Zymo-Spin™ Column** in a **Collection Tube**. Centrifuge at 10,000 *x g* for one minute. Discard the **Collection Tube** with the flow through.

2. Transfer the **Zymo-Spin™ Column** to a new **Collection Tube**. Add 200 µl of **DNA Pre-Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

3. Add 500 µl of **g-DNA Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

4. Transfer the spin column to a clean microcentrifuge tube. Add ≥50 µl **DNA Elution Buffer** or water to the spin column. Incubate 2-5 minutes at room temperature and then centrifuge at top speed for 30 seconds to elute the DNA. The eluted DNA can be used immediately for molecular based applications or stored ≤-20ºC for future use.

For solid tissues, Proteinase K treatment or mechanical homogenization is required. For purification of up to 25 µg DNA/prep utilizing Proteinase K, use the ***Quick*-DNA™ Universal Kit** (D4068, D4069).

Solid Tissue Samples

Note: *For Proteinase K digested materials (e.g., tailsnips) follow the protocol for* ***Cell Suspensions and Proteinase K Digested Samples*** *(pg. 6). Otherwise, mechanically homogenize up to 25 mg of fresh or frozen tissue in 500 µl of* ***Genomic Lysis Buffer****.*

Soft tissue samples are readily homogenized using our **Squisher™-Single**, **Squisher™-8**, and **Squisher™-96** products.

1. Centrifuge the lysate at top speed (10,000 *x g*) for 5 minutes. Making sure not to disturb the pelleted debris, transfer the supernatant to a **Zymo-Spin™ Column** in a **Collection Tube** and centrifuge at 10,000 *x g* for one minute. Discard the **Collection Tube** with the flow through.

2. Transfer the **Zymo-Spin™ Column** to a new **Collection Tube**. Add 200 µl of **DNA Pre-Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

Typical yields are: 1-3 µg DNA per mg skeletal, heart, and brain tissues and 3-5 µg per mg liver, kidney, and lung tissues.

3. Add 500 µl of **g-DNA Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

4. Transfer the spin column to a clean microcentrifuge tube. Add ≥50 µl **DNA Elution Buffer** or water to the spin column. Incubate 2-5 minutes at room temperature and then centrifuge at top speed for 30 seconds to elute the DNA. The eluted DNA can be used immediately for molecular based applications or stored ≤-20 ºC for future use.

Cell Monolayer Samples

Generally, no more than $5.0x10^6$ cells should be sampled, for larger samples will exceed the binding capacity of the spin column. See **Guidelines for Monolayer Cell Isolation** (below).

*The following procedure is designed for up to $5.0x10^6$ (max.) monolayer cells (roughly equal to a T25 flask). Although cell types and culture conditions may vary, the protocol will work with high-density growth cells (e.g., HeLa cells) as well as with low-density growth cells (e.g., neuronal cells). The procedure may be scaled up or down for increases or decreases in the amounts of monolayer cells sampled (see the **Guidelines for Monolayer Cell DNA Isolation** below).*

1. Trypsinize or manually scrape adherent cells from the growth surface of a culture flask or plate. Centrifuge the cell suspension at approximately 500 x *g* for 5 minutes. Remove the supernatant and add 500 µl[1] of **Genomic Lysis Buffer** directly to the cell pellet. Resuspend pellet by vortexing 4-6 seconds and let stand for 5-10 minutes at room temperature.

   Alternatively: Cells can be lysed directly in the culture container by removing the medium and adding the Genomic Lysis Buffer directly to the monolayer surface.

It may be necessary to centrifuge the sample mixture before transferring the supernatant to the **Zymo-Spin™ Column** to remove insoluble material that may clog the column.

2. Transfer the mixture to a **Zymo-Spin™ Column** in a **Collection Tube**. Centrifuge at 10,000 *x g* for one minute. Discard the **Collection Tube** with the flow through.

The column capacity is ~1 ml.

3. Transfer the **Zymo-Spin™ Column** to a new **Collection Tube**. Add 200 µl of **DNA Pre-Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

4. Add 500 µl of **g-DNA Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

5. Transfer the spin column to a clean microcentrifuge tube. Add ≥50 µl **DNA Elution Buffer** or water to the spin column. Incubate 2-5 minutes at room temperature and then centrifuge at top speed for 30 seconds to elute the DNA. The eluted DNA can be used immediately for molecular based applications or stored ≤-20 C for future use.

[1]**Guidelines for Monolayer Cell DNA Isolation:** The above procedure is designed for the processing of $0.1\text{-}5.0x10^6$ cells. However, cell numbers (growth densities) can vary between different cell types. Table 1 (pg. 6) provides an approximation of what can be recovered from different culture containers for high-density growth cells like CV1 and HeLa cells. If processing more than $1.0x10^6$ cells, double the volume of **Genomic Lysis Buffer** added (i.e., 1 ml) to the sample.

Table 1: Culture Plate/Flask Growth Area (cm^2) and Cell Number

Culture Container	Well /Flask Surface Area	Cell Number
96-well plate (each well)	0.32-0.6 cm^2	4-5x10^4
24-well plate (each well)	2 cm^2	1-3x10^5
12-well plate (each well)	4 cm^2	4-5x10^5
6-well plate (each well)	9.5 cm^2	0.5-1x10^6
T25 Culture Flask	25 cm^2	2-3x10^6
T75 Culture Flask	75 cm^2	0.6-1x10^7
T175 Culture Flask	175 cm^2	2-3x10^7

For solid tissues, Proteinase K treatment or mechanical homogenization is required. For purification of up to 25 µg DNA/prep utilizing Proteinase K, use the ***Quick*-DNA™ Universal Kit** (D4068, D4069).

Cell Suspensions and Proteinase K Digested Samples

The following protocol is designed for up to 200 µl of biological liquid sample including CSF, buffy coat, body fluids (semen), and cell suspensions containing less than 5.0x10^6 cells as well as lysates derived from Proteinase K digested samples.

Cells should be processed directly from biological fluids or from suspension in PBS, TE, or compatible buffers.

1. Add 4 volumes of **Genomic Lysis Buffer** to each volume of liquid sample (4:1). (e.g., add 800 µl of **Genomic Lysis Buffer** to 200 µl liquid sample). Mix briefly by vortexing, then let stand at room temperature for 5-10 minutes.

   Note: For Proteinase K digested material, add 4 volumes of **Genomic Lysis Buffer** to each volume of lysate then mix briefly by vortexing. Centrifuge the mixture at 10,000 *x g* for 5 minutes. Transfer up to 1 ml supernatant to the Zymo-Spin™ Column in Step 2.

2. Transfer the mixture to a **Zymo-Spin™ Column** in a **Collection Tube**. Centrifuge at 10,000 *x g* for one minute. Discard the **Collection Tube** with the flow through.

The column capacity is ~1 ml.

3. Transfer the **Zymo-Spin™ Column** to a new **Collection Tube**. Add 200 µl of **DNA Pre-Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

4. Add 500 µl of **g-DNA Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

5. Transfer the spin column to a clean microcentrifuge tube. Add ≥50 µl **DNA Elution Buffer** or water to the spin column. Incubate 2-5 minutes at room temperature and then centrifuge at top speed for 30 seconds to elute the DNA. The eluted DNA can be used immediately for molecular based applications or stored ≤-20ºC for future use.

Typical yields from Proteinase K digested tissues are: 1-3 µg DNA per mg skeletal, heart, and brain tissues and 3-5 µg per mg liver, kidney, and lung tissues.

Troubleshooting:

1. DNA degradation: Check for DNase contamination. All reagents supplied with the ***Quick-gDNA*™ MiniPrep** are DNase-free. However, DNase contamination could result during the processing of some samples. Check pipets, pipet tips, microcentrifuge tubes, etc., and exercise the appropriate precautions during the DNA purification procedure.

2. DNA is not performing well in subsequent experiments: Ensure the correct volume of **Genomic Lysis Buffer** has been added to the sample. Also, make sure all centrifugation steps are completed for the indicated times and speeds (rcfs). Failure to do so may result in incomplete washing, which may cause salts to be eluted with the DNA affecting quantitation and subsequent experiments including enzymatic processes like PCR.

3. RNA contamination: The buffers in this kit are designed to efficiently hydrolyze and remove RNA during the DNA purification procedure.

Ordering Information

Product Description	Cat. No.	Kit Size
***Quick-gDNA*™ MicroPrep**	D3020 D3021	50 preps. 200 preps.
***Quick-gDNA*™ MiniPrep** w/ **uncapped** columns	D3006 D3007	50 preps. 200 preps.
***Quick-gDNA*™ MiniPrep** w/ **capped** columns	D3024 D3025	50 preps. 200 preps.
***Quick-gDNA*™ MidiPrep**	D3100	25 preps.
ZR-96 *Quick-gDNA*™	D3010 D3011 D3012	2x96 well 4x96 well 10x96 well

For Individual Sale	Cat. No.	Amount
Genomic Lysis Buffer	D3004-1-50 D3004-1-100	50 ml 100 ml
DNA Pre-Wash Buffer	D3004-5-15 D3004-5-30 D3004-5-50	15 ml 30 ml 50 ml
g-DNA Wash Buffer	D3004-2-50 D3004-2-100	50 ml 100 ml
DNA Elution Buffer	D3004-4-10	10 ml
Zymo-Spin™ IIN Columns (uncapped)	C1019-50 C1019-250	50 250
Zymo-Spin™ IIC Columns (capped)	C1011-50 C1011-250	50 250
Collection Tubes	C1001-50 C1001-500 C1001-1000	50 500 1,000

DNA PURIFICATION

What is Clean-Spin™ Technology?

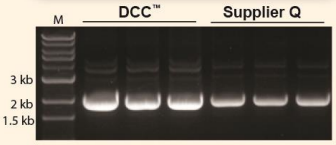
The spin columns from Zymo Research have been designed to ensure complete elution with no binding/wash buffer carryover. The result is ultra-pure inhibitor-free DNA and RNA.

Purify DNA from PCR & other sources

DNA Clean & Concentrator™ (DCC™)

- ✓ Recovery of ultra-pure DNA that is free of salts and contaminants.
- ✓ Small (≥6 µl) elution volume.
- ✓ DNA is ideal for ligation, PCR, Next-Gen sequencing, etc.

Product	Size (Cat. No.)
DNA Clean & Concentrator™-5	50 Preps. (D4013) 200 Preps. (D4014)
ZR-96 DNA Clean & Concentrator™-5	2 x 96 Preps. (D4023) 4 x 96 Preps. (D4024)
Genomic DNA Clean & Concentrator™	25 Preps. (D4010) 100 Preps. (D4011)



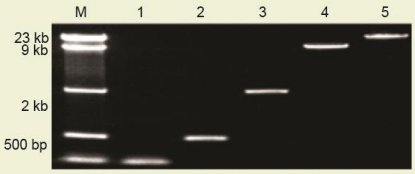
High efficiency DNA recovery with the DCC™-5 compared to Supplier Q .

Boost DNA recoveries from agarose gels to >80%

Zymoclean™ Gel DNA Recovery

- ✓ Rapid (15 min.) recovery of ultra-pure DNA from agarose gels in ≥6 µl.
- ✓ Ultra-pure DNA ideal for DNA ligation, sequencing, etc.
- ✓ Format also available for large DNA >20 kb.

Product	Size (Cat. No.)
Zymoclean™ Gel DNA Recovery Kit	50 Preps. (D4001) 200 Preps. (D4002)
Zymoclean™ Large Fragment DNA Recovery Kit	25 Preps. (D4045) 100 Preps. (D4046)



DNA fragments recovered from an agarose gel using the Zymoclean™ Gel DNA Recovery Kit. Lanes: M: DNA Ladder; 1-5: individual ladder DNA fragments.

Recover transfection-quality plasmid DNA directly from culture

Zyppy™ Plasmid Prep Kits

- ✓ The fastest, simplest method available for purifying high quality plasmid DNA from *E. coli.*
- ✓ Pellet-Free™ procedure omits conventional cell-pelleting and resuspension steps.
- ✓ Transfection quality plasmid DNA directly from culture in under 15 minutes.

Easy, Pellet-free Procedure: Add Lysis Buffer ***Directly*** to Bacterial Culture

Product	Size (Cat. No.)
Zyppy™ Plasmid Miniprep Kit	50 Preps. (D4036) 100 Preps. (D4019) 400 Preps. (D4020) 800 Preps. (D4037)

RNA PURIFICATION

What is Clean-Spin™ Technology?

The spin columns from Zymo Research have been designed to ensure complete elution with no binding/wash buffer carryover. The result is ultra-pure inhibitor-free DNA and RNA.

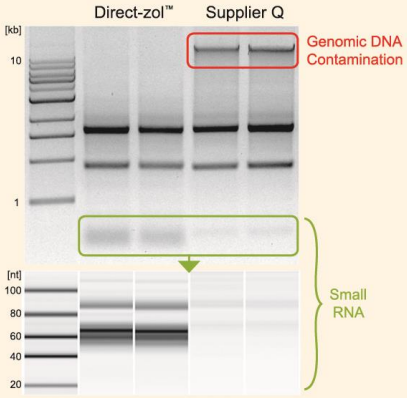
Get RNA *directly* from TRIzol® without phase separation

Direct-zol™ RNA

- ✓ For purification of high-quality small and large RNA *directly* from TRIzol®, TRI Reagent®, or similar.
- ✓ Bypasses phase separation and precipitation procedures allowing for unbiased recovery of miRNA

Product	Size (Cat. No.)
Direct-zol™ RNA MiniPrep	50 Preps. (R2050) 50 Preps. (R2051)* 200 Preps. (R2052) 200 Preps. (R2053)*
96-well and MagBead formats also available!	

DNase I included in all kits.
* Supplied with *TRI-Reagent®*



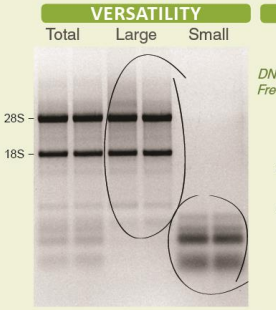
High-quality small and large RNA are effectively recovered with the Direct-zol™ kit. RNA is ***DNA-free***.

Isolate DNA-free RNA from 1 to 10^7 cells in minutes

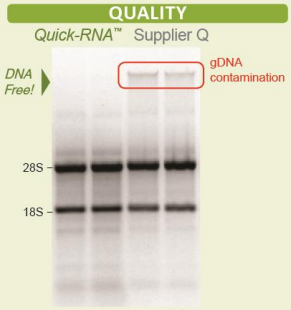
Quick-RNA™

- ✓ Isolation of total, large, or small RNA – *You decide!*
- ✓ Ultra clean, high-quality RNA from a single cell to 10^7 cells.
- ✓ DNA-free RNA ideal for any downstream application – *DNase I included.*

Product	Size (Cat. No.)
Quick-RNA™ MicroPrep	50 Preps. (R1050) 200 Preps. (R1051)
Quick-RNA™ MiniPrep	50 Preps. (R1054) 200 Preps. (R1055)
ZR-96 *Quick-RNA*™	2 x 96 Preps. (R1052) 4 x 96 Preps. (R1053)



Isolate total, large, or small RNA with the *Quick-RNA*™ kit.



RNA is DNA-free using the *Quick-RNA*™ kit

Purify RNA from enzymatic and labeling reactions in 5 minutes

RNA Clean & Concentrator™

- ✓ Recover ultra-pure RNA in small (≥6 µl) elution volumes.
- ✓ Compatible with TRIzol®, phenol, choloform, and RNase inhibitors (RNAlater®).
- ✓ RNA is ideal for RT-PCR, q-PCR, hybridization, arrays, RNA interference, etc.

Product	Size (Cat. No.)
RNA Clean & Concentrator™-5	50 Preps. (R1015) 200 Preps. (R1016)
RNA Clean & Concentrator™-25	50 Preps. (R1017) 100 Preps. (R1018)
ZR-96 RNA Clean & Concentrator™	2x96 well plates (R1080)
DNA-Free RNA Kit™	50 Preps. (R1013) 200 Preps. (R1014)

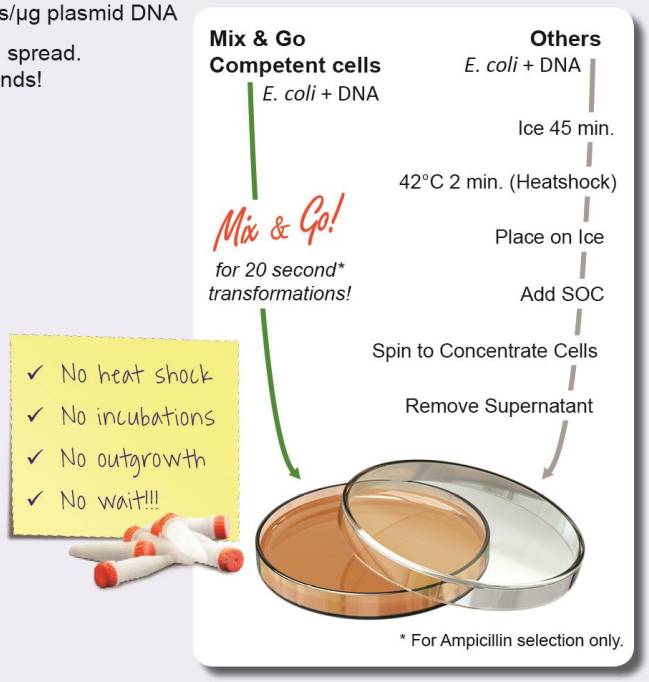
OTHER INNOVATIVE PRODUCTS FROM ZYMO RESEARCH...

Competent cells for transformations *without* heat shock!

Mix & Go! Pre-made Competent *E. Coli*

- ✓ High efficiency: 10^8-10^9 transformants/µg plasmid DNA
- ✓ Just *Mix & Go!* Simply add DNA then spread. Transformation in as little as 20 seconds!

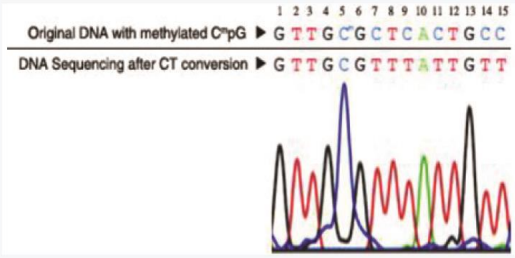
Product	Size (Cat. No.)
Zymo 5α (Same as DH5α)	10 x 100 µl aliquots (T3007) 96 x 50 µl aliquots (T3009) 96 x 50 µl aliquots PCR-plate (T3010)
Zymo 10B (Same as DH10B)	10 x 100 µl aliquots (T3019) 96 x 50 µl aliquots (T3020)
JM109	10 x 100 µl aliquots (T3003) 96 x 50 µl aliquots (T3005)
HB101	10 x 100 µl aliquots (T3011) 96 x 50 µl aliquots (T3013)
C600	10 x 100 µl aliquots (T3015)
TG1	10 x 100 µl aliquots (T3017)



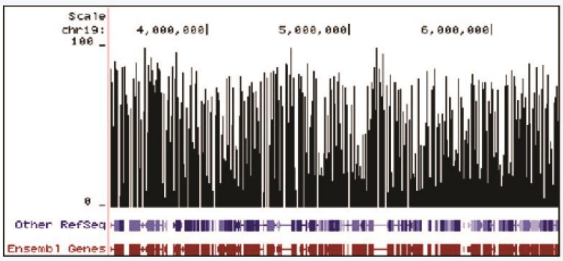
The fastest method for complete bisulfite conversion of DNA

EZ DNA Methylation-Lightning™ Kits

- ✓ The next generation of bisulfite conversion technology by the most cited provider in the industry
- ✓ Guarantees high conversion efficiencies of cytosine (>99.5%)
- ✓ Maintains the highest template integrity following bisulfite conversion
- ✓ Recovered DNA is ideal for PCR, MSP, array, bisulfite, and next-generation sequencing.



DNA Sequencing Results Following Bisulfite Treatment



Methylation Plot From Reduced Representation Bisulfite Sequencing (RRBS)

Product		Size (Cat. No.)
EZ DNA Methylation-Lightning™ Kit		50 rxns. (D5030) 200 rxns. (D5031)
EZ-96 DNA Methylation-Lightning™ Kit	Shallow-Well Deep-Well	2 x 96 rxns. (D5032) 2 x 96 rxns. (D5033)
EZ-96 DNA Methylation-Lightning™ MagPrep		4 x 96 rxns. (D5046) 8 x 96 rxns. (D5047)

ZYMO RESEARCH

The Beauty of Science is to Make Things Simple