INSTRUCTIONS

ZR Serum DNA Kit ™

Catalog No. D3013 (for total 250 ml serum process)

Highlights

- Pure total DNA purification from large volume of serum or plasma.
- Easy scale up or down procedure for different sizes of samples, such as 100 ul to 10 ml of serum.
- Safe with common anti-coagulants (EDTA, Heparin, Citrate).
- High quality DNA for PCR and other sensitive detection methods.
- No organic extraction, precipitation, or proteinase K digestion.

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ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

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GENERAL INFORMATION

Specification:

DNA Purity: High-purity DNA is recovered in water which is especially good for subsequent experiments.

Recovery Volume: 10-20 ul for standard procedure, can be adjusted according sample size.

DNA Size Recovery: >100 bp for Viral, genomic and mitochondria DNA.

Sample Range: serum, plasma and other low cell concentration body fluid.

Stability: Quality is guaranteed for 1 year from the purchase date.

Kit Contents: D3013

Genomic Lysis Buffer	1000 ml	Room Temperature
DNA Wash Buffer	24 ml	Room Temperature
Zymobeads	1 ml	Room Temperature
Elution Buffer	4 ml	Room Temperature
Instructions	1	Room Temperature

Ordering Information:

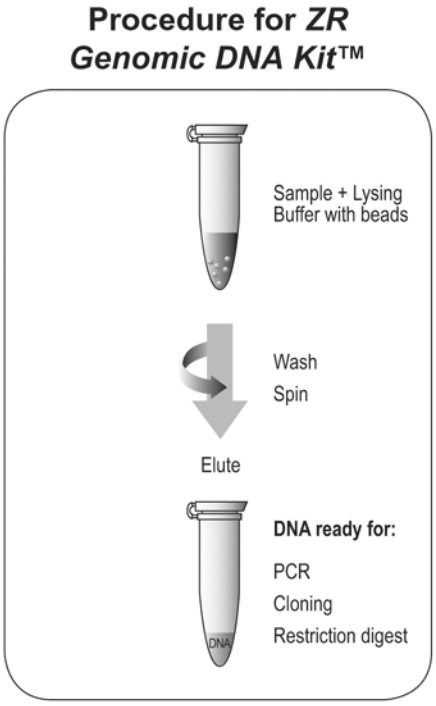
Products	Cat No	Size
ZR Serum DNA Kit™ Reagents provided are for 250 ml serum process.	**D3013**	**1 kit**
Order information For Individual Components		
Genomic Lysis Buffer	D3004-1000	1000 ml
DNA Wash Buffer	D4004-2-24	24 ml
Zymobeads	D3004-3-1	1 ml
DNA Elution Buffer	D3004-4-4	4 ml

General Description

The **ZR Serum DNA Kit** is based on a simple one buffer procedure for rapid DNA isolation. The kit is specifically designed for DNA isolation from large volume serum or plasma samples. The procedure is optimized to produce high quality DNA without RNA contamination. The **ZR Serum DNA Kit** can efficiently recover DNA fragment larger than 100bp from genomic, mitochondria and viral DNAs. The uniquely formulated **Genomic Lysis Buffer** directly lyses the cells, virus or cellular particles and releases the DNA. The procedure then relies upon the rapid adsorption of the released DNA onto the surface of the **Zymobeads** in the buffer at the same time. The DNA/**Zymobead** complex is separated by brief centrifugation and wash steps are performed to remove contaminants. DNA is eluted in supplied low salt **Elution Buffer**. The yield of DNA is quantitative, reproducible and the DNA is of good purity for direct molecular biology applications such as PCR and other sensitive detection methods.

Quick Overview:

- This protocol utilizes a single buffer system to efficiently isolate and purify genomic or viral DNA from large volume serum or plasma. DNA is first released from associated proteins and collected using the **Zymobeads** in **Genomic Lysis Buffer.** The DNA is then washed and eluted with water or supplied elution buffer.
- To isolate DNA from samples, simply add 10ul of **Zymobeads,** your sample and 4 volume of the **Genomic Lysis Buffer**, then spin, wash and elute.
- Minimal Elution volume: 10 ul.



Note: All procedures are carried out at room temperature (15-30°C) except where specifically instructed. Centrifugal steps labeled in RPM are done in a standard tabletop centrifuge (5,000RPM = 2,300RCF).

Liquid Sample Protocol

The following protocol is designed for serum or plasma sample. The amount of serum can be adjusted according experimental needs. This procedure can be used for other biological liquid samples with low cell numbers (less than $1x10^4$ cells).

1. Ensure that the **Zymobeads** are fully resuspended by vortexing for a few seconds. Add 10ul of **Zymobeads** and 4 volumes of **Genomic Lysis Buffer** to each volume of sample in a conical tube;

   Example #1: 800 ul of plasma, add 3.2 ml of **Genomic Lysis Buffer** and 10 ul of **Zymobeads**.
   Example #2: 5.0 ml of serum, add 20 ml of **Genomic Lysis Buffer** and 10 ul of **Zymobeads**.

2. Mix completely. Place the sample on a rotator and rotate the sample for 2 hours to overnight at 0-4°C.

3. Centrifuge at 5,000 RPM for 1 minute. Discard the supernatant.

4. Add 500ul of **DNA Wash Buffer** to the pellet. Resuspend pellet by vortexing or break up the pellet using a pipette tip. Transfer the suspension into a small micro-centrifuge tube.

5. Centrifuge at 5,000RPM for 1 minute in a micro-centrifuge. Discard the supernatant.

6. Add another 500ul of **DNA Wash Buffer** to the **Zymobeads**/DNA complex. Resuspend the pellet as in step 4. Centrifuge at 5,000RPM for 1 minute. Discard the supernatant.

7. Recentrifuge briefly and remove any residual wash buffer. Air-dry the pellet for 5-15 minutes.

8. Add 10-35ul of water or supplied **Elution Buffer**, vortex or break up pellet by pipetting, and incubate at 65°C for 5 minutes.

9. Vortex briefly. Centrifuge at top speed (>10,000RPM) for 60 seconds.

10. Collect the supernatant. The supernatant now contains purified genomic DNA and now can be used immediately for any molecular analysis or stored at –20°C for future use.

Note: Molecular grade water is strongly recommended for elution. TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8.0) can also be used for the elution step if it is required by your experiment.

Trouble shooting:

1. DNA degradation: Check for DNase contamination of buffers. All buffers and contents supplied by Zymo Research are DNase-free. DNase may be introduced during experiments. Check tips, tubes, etc. and exercise standard precautions while handling DNA experiments. Please note that cell-free genomic DNA in serum or plasma is normally in fragmented format, but virus DNA should be intact.
2. DNA not performing well in subsequent experiments: Make sure to add the correct amount of **Genomic Lysis Buffer** to the appropriate volume of sample. Also, make sure spin procedures are complete and pellet is resuspended completely, as incomplete washing of salts and buffers may adversely affect results.
3. RNA contamination: The combination of the buffers and **Zymobeads** provided in this kit are optimized to efficiently isolate DNA while removing RNA.
4. DNA yield is low: check for complete resuspension of beads in all steps. Also make sure that incubation period at 65°C is complete and vortexed at last step.