

# G-spin™ Genomic DNA Extraction Kit (For Blood)

Cat. No.

17111

50 columns

## DESCRIPTION

G-spin™ Genomic DNA Extraction Kits are designed for rapid isolation of genomic DNA from various sample sources including fresh or frozen animal cells/tissues (for Cell/Tissue) and bacteria (for Bacteria), yeasts (for Yeast), plant (for Plant) or bloods (for Blood). The purified DNA is free of contaminants and impurities, and is ideal for all PCR, Southern blotting, RAPD, and RFLP applications.

G-spin™ kits use advanced silica-gel-membrane technology for rapid and efficient purification of genomic DNA without organic extraction or ethanol precipitation. Furthermore, G-spin™ buffer system is optimized to allow rapid and simple cell lysis followed by selective binding of DNA to the column. The G-spin™ procedure is very simple, so you can purify DNA from a variety of target sources within 15-20min.

## STORAGE

Store at RT except for G-buffer & Binding buffer. G-buffer & Binding buffer shall be stored at 4 °C after receiving.

## KIT CONTENTS

• RBC lysis buffer	45ml
: RBC lysing solution	
• G-buffer	20ml
: Cell lysing solution. Before use, add 0.1ml of RNase A stock solution and add 0.1ml of Proteinase K stock solution. After add RNase A and Proteinase K stock solution, G-buffer should then be stored at 4 °C.	
• Binding buffer	20ml
: Genomic DNA binding solution. After receiving, Binding buffer shall be stored at 4 °C.	
• Washing buffer	10ml
: Before use, add 40ml of absolute EtOH.	
• Elution buffer	50ml
• G-spin™ columns	50 columns
: Columns containing silica-membrane	
• Collection tubes	50 tubes
: Polypropylene tube for 2ml	
• RNase A stock solution	0.1ml
• Proteinase K stock solution	0.1ml

## PROTOCOL (For Bloods)

### RBC Lysis Procedure

1. Add 300µl of blood to a 1.5ml tube.

**Note :** Blood must be collected in EDTA, heparin and citrate-coated tube to prevent clotting. In case of using more than 300µl of whole blood, add buffer at the same volume ratio (whole blood:buffer=1:3) as before. Make sure to use larger tube for larger volume of blood preparation. If 15ml or 50ml tube is used, centrifuge at 2,000 g.

2. Add 900µl of RBC lysis buffer, and vortex.

**Note :** This step is to remove RBC. If any RBC is left behind, proteins such as histone will hamper experiments like PCR. Therefore, it is extremely important to remove RBC completely.

3. Incubate for 10min on ice. Centrifuge at 13,000rpm for 30sec to obtain white blood cell pellet.

**Note :** If the RBC are still visible after centrifuge, repeat step 2.

4. Resuspend white blood cell pellet in 300µl G-buffer solution, and mix well.

**Note :** Mix by pipetting until no visible cell clumps remain. If clumps of cells are still visible after 5-6 pipetting the solution. However, avoid any vigorous vortexing because doing so may induce genomic DNA breakage. Apply vortex before you add solution II to resuspend cell pellets. This will speed up lysis.

5. Incubate at 70 °C for 5min.

**Note :** Lyse cells completely. For many cells, increase incubation time. To help lyse cells, mix by vortexing the tube once during the incubation.

6. Mix well by pipetting 2-3 times.

**Note :** This step is semi-homogenization step to denature protein. Also, this step conduces to pass efficiently cell lysates through a column.

7. Add 300µl of Binding buffer and mix gently.

8. Apply the sample to G-spin™ columns, and centrifuge for 1min at 13,000rpm (room temperature). After centrifugation, remove the column from collection tube, discard filtrate in collection tube. And then place the spin column back in the same collection tube.

**Note :** The maximum volume of the column reservoir is 800µl. For sample volumes of more than 800µl, simply load and spin again. The cell lysates is very sticky. Remove all traces of cell lysates through a centrifugation. If cell lysates remain, centrifuge one more time for 1min to remove all traces of lysates.

9. To wash, add 500µl of washing buffer to G-spin™ columns and centrifuge for 1min. After centrifugation, remove the column from collection tube, discard filtrate in collection tube. And then place the spin column back in the same collection tube.

10. Centrifuge the column for an additional 1min at 13,000rpm to dry the filter membrane.

11. Place the column into a fresh 1.5ml tube. To elute DNA, add 200µl elution buffer to the center of the column, incubate at RT for 1min, and then centrifuge for 1min.