**Blood Genomic DNA Extraction Kit**  
(Catalog# K1443-100; 100 tests; Storage at Multiple Temperatures)  

**I. Introduction:**

**Blood Genomic DNA Extraction Kit** is suitable for the extraction of DNA from fresh or frozen whole blood treated with anticoagulant. The special Red Blood Cell lysis solution can efficiently extract DNA from the blood cells. The purified DNA has a typical ratio of the OD260/280 between 1.7 to 1.9, and the recovered DNA size can be up to 60 kb. The resulting product can be used directly as a template for PCR, hybridization, etc. The kit will work with a 48 well round bottom plate if a special magnetic frame is used. The kit can also be used with a variety of automatic nucleic acid extraction instruments or workstation.

**II. Applications:**

- Extraction of DNA from fresh or frozen whole blood treated with anticoagulant. Purified DNA can be used as a template for PCR, hybridization, etc.

**III. Sample Type:**

- Blood

**IV. Kit Contents:**

<table>
<thead>
<tr>
<th>Component</th>
<th>K1443-100</th>
<th>Part Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetic Beads</td>
<td>10 ml</td>
<td>K1443-100-1</td>
</tr>
<tr>
<td>Proteinase K Solution</td>
<td>2 ml</td>
<td>K1443-100-2</td>
</tr>
<tr>
<td>Blood Cells Lysis Solution</td>
<td>20 ml</td>
<td>K1443-100-3</td>
</tr>
<tr>
<td>Wash Solution 1**</td>
<td>45 ml</td>
<td>K1443-100-4</td>
</tr>
<tr>
<td>Wash Solution 3**</td>
<td>15 ml</td>
<td>K1443-100-5</td>
</tr>
<tr>
<td>Elution Buffer</td>
<td>20 ml</td>
<td>K1443-100-6</td>
</tr>
</tbody>
</table>

*Add 30 mL of Isopropanol to Wash Solution 1 (K1443-100-4) before use; **Add 60ml of 100% ethanol to Wash Solution 3 (K1443-100-5) before use.

**V. User Supplied Reagents and Equipment:**

- Magnetic racks compatible with vials used.
- DNase and RNase free water
- 100% Ethanol.
- Isopropanol (ACS grade).
- Wash Solution 2: (80% ethanol in DNase and RNase free water, to be prepared as described below)

**VI. Storage Conditions and Reagent Preparation:**

Magnetic beads should be stored at 2-8°C. All kit reagents need to be stored at 4°C except Proteinase K Solution which should be stored at -20°C. Lysis solution may turn cloudy if stored in the cold room and to clear it up place the bottle in a water bath at 37°C. Reagent Preparation:

- Wash solution 1*: Dilute the solution by adding 30 ml of Isopropanol before use.
- Wash Solution 2: Prepare 80% ethanol in DNase and RNase free water.
- Wash Solution 3**: Dilute the solution by adding 60 ml of 100% Ethanol before use.

**VII. Assay Protocol:**

1. Preparation of sample: Add 200 µl of blood sample (or diluted with elution solution to make 200µl volume), 200 µl of Blood lysis solution, and 30 µl of Proteinase K solution into a clean Eppendorf tube. Incubate for 15 min at 58°C and vortex the mixture for 30 seconds every 3 min, during the incubation. Cool to room temperature and proceed to next step.
2. Add 100 µl of magnetic beads to the tube with sample.
3. Add 300 µl of isopropanol to the tube with sample.
4. Mix well, shake and incubate for 5-10 min at room temperature. Place Eppendorf tube onto the magnet rack for 20 seconds. Make sure the beads are collected at the bottom of the tube.
5. Remove supernatant by holding the magnet rack upside down or by pipetting.
6. Wash the beads with 700 µl of wash solution 1, Apply magnet for 20 second then remove supernatant as in Step 5.
7. Wash the beads with 700 µl of wash solution 2, Apply magnet and remove supernatant as in Step 5.
8. Wash the beads with 700 µl of wash solution 3, Apply magnet and remove supernatant as in Step 5.
9. Dry the beads at 55°C for 3-4 min, leaving the tube open. Do not over-dry the beads.
10. Elute DNA from beads with 100-200 µl of elution buffer; incubate at 60°C for 2 min and then vortex at full speed for 30 seconds. Wait for 8 min after the incubation and vortex again for 30 seconds.
11. Remove beads by using magnet rack, pipette DNA out and transfer to a clean tube.
12. Store purified DNA at -20°C for long-term storage.

**VIII. Related Products:**

- Cell & tissue genomic DNA extraction and purification kit (# K1442)
- Mitochondrial DNA Isolation Kit (Cat# K280)
- Whole Blood DNA Isolation Kit (Cat# K528)
- Agarose gel DNA extraction kit (Cat# K1441)
- Plasmid DNA extraction kit (Cat# K1445)

**FOR RESEARCH USE ONLY! Not to be used on humans.**