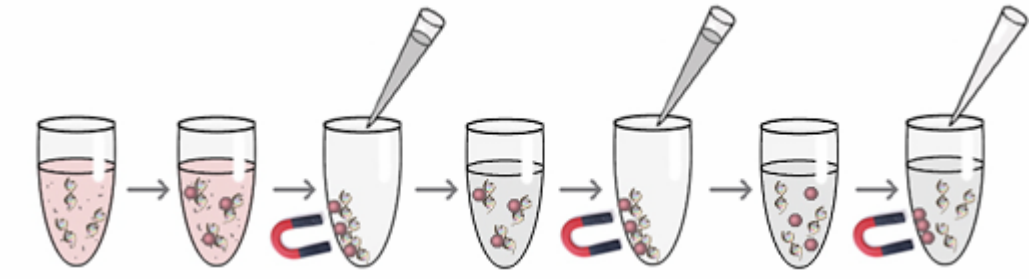
GoldMag®-Mini Whole Blood Genomic DNA Purification Kit

Introduction

The GoldMag®-Mini whole blood genomic DNA purification kit is designed for rapid, efficient purification of genomic DNA from fresh or frozen animal blood. The purified genomic DNA is suitable for use in downstream applications including PCR, restriction enzyme digestion, and Southern blotting. It yields 2~5 μg genomic DNA from 100 μl mammalian blood and 8~20 μg genomic DNA from 100 μl birds' blood within 40 min.
The process can be performed in single tube formats. Purification begins by the addition of lysis buffer to whole blood, and then mixed with the magnetic particles in binding buffer. DNA is immobilized on magnetic particle surface. After the simple washing procedure, the genomic DNA can be eluted from the magnetic particle surface.



Features

• **Fast** –DNA purification process is less than 40 min.
• **Reliable** – Highly yield of genomic DNA
• **Pure** - Super-quality, Minimal RNA and proteins contaminations
• **Simple** - Easy to use

Quality

One kit of this lot has been tested to go through the purification of genomic DNA procedure from human and pig blood. The ratio of OD_{260}/OD_{280} is between 1.7 and 1.9. The product from the purification was used for electrophoresis and PCR.

Contents

GoldMag® particles	5 ml
Proteinase K	1 ml
Lysis Buffer	12 ml
Binding Buffer	17 ml
Wash Buffer-1 Concentrate	10 ml
Wash Buffer-2 Concentrate	11ml
Elution Buffer	10 ml

Before using for the first time, add 14 ml of ethanol to Wash Buffer-1 Concentrate and 27 ml of ethanol to Wash Buffer-2 Concentrate.

Storage and Stability

Store the GoldMag® particles at 2~8°C. Proteinase K must be stored at -20°C. Store all other components at room temperature (15~25°C). All components are guaranteed stable for 1 year if stored properly.

Equipment required

1. Magnetic separator: 8-tube separator provided by Biochain (Cat.# Z5060016)
2. Pipettes
3. Microcentrifuge tube (1.5 or 2.0 ml)
4. Water bath
5. Centrifuge

Genomic DNA purification from whole blood

Before starting

1. Bring frozen samples and Proteinase K solution to room temperature.
2. Prepare 56°C heat block or water bath.

1a. Nonnucleated: Add 40 µl Proteinase K , 100 µl blood and 300 µl Lysis Buffer into a tube. Mix well by pipetting and incubate it at 56°C for 20 min.

1b. Nucleated: Add 40 µl Proteinase K , 5 µl blood and 95 µl PBS (or TE Buffer, pH 8.5) into a tube, mix well by pipetting and incubate it at 56°C for 20 min.

Optional: Add 5 µl RNase A (10 mg/ml) if RNA is not needed.

2. Shake the GoldMag® particles well to make sure they are evenly suspended in the solution.
3. Add 100 µl GoldMag® particles to a tube, then place the tube on the magnetic separator until the supernatant is clear. The separation procedure may be completed in 1 min.
4. Keep the tube on the magnetic separator and carefully aspirate the supernatant with pipette, leaving the magnetic particles on the wall of the tube. Add 300 µl of Binding Buffer to the tube and mix well by pipetting..
5. Transfer GoldMag® particles to the lysate of step 1, mix well gently by pipetting. Incubate at room temperature for 5 min. Place the tube on the magnetic separator for 3 min to magnetically separate, aspirate the supernatant and discard with pipette while the tube is situated on the magnetic separator.
6. Take the tube off the magnetic separator. Add 400 µl Wash Buffer-1 and mix well by pipetting. Place the tube back on the magnetic separator until the supernatant is clear. Aspirate the supernatant and discard with pipette while the tube is situated on the magnetic separator.
7. Take the tube off the magnetic separator. Add 400 µl Wash Buffer-2 and mix well by pipetting. Place the tube back on the magnetic separator until the supernatant is clear. Aspirate the supernatant and discard with pipette while the tube is situated on the magnetic separator.
8. Take the tube off the magnetic separator. Add 200 µl Wash Buffer-2 and mix well by pipetting. Place the tube back on the magnetic separator until the supernatant is clear. Aspirate the supernatant and discard with pipette while the tube is situated on the magnetic separator. Remove as much off the Washing Buffer-2 as possible.
9. Leave the tube to air dry on the magnetic separation for 5 min.
10. Add 100 µl of Elution Buffer to the tube, mix well by pipetting. Incubate at 56°C water bath for 5 min.
11. Place the tube back on the magnetic separator for 3 min until the supernatant clears. Transfer the supernatant to another tube for storage or for ready to use (-20°C).

Trouble Shooting

1. The OD_{260}/OD_{280} ratio is too low or too high.
   The sample was contaminated with protein resulting in a low ratio (＜1.6). Repeat the washing step (step.6 in the purification protocol) more 1~2 times to completely remove protein.
   The sample was contaminated with RNA resulting in a high ratio (＞2.0). It may be necessary to increase the RNase A treatment time for 5 min at room temperature.
2. DNA yields are low

   *There were too few nucleated cells in the sample or cell lysis was incomplete.

Too few cells may create an imbalance in the DNA purification chemistry and effectively inhibit DNA precipitation. Too many cells may overload the chemistry inhibiting complete cell lysis. In either situation, the result is low yield.

* Blood stored at 2~8°C for up to 30 days, we suggest stored at -20 ~ -70°C for a long time.

3. DNA concentration is low

   The DNA concentration was lower than expected. You can add a few of Elution Buffer in the elution process.

Related Products and Separate Components

8 Tube Magnetiç Separator (1.5 ml) (Cat# Z5060016)

This Kit is for Research Use Only