Preparing Whole Blood, Buffy Coat and Bone Marrow Samples for DNA Purification

Materials to Be Supplied by the User

- benchtop vortex mixer
- pipettors and pipette tips for sample transfer into prefilled reagent cartridges
- 1.5–2.0ml tubes for incubation of samples (e.g., ClickFit Microtube, 1.5ml [Cat.# V1231])
- heating block set at 56°C
- **optional:** rotating tube mixer

Notes:

a. This kit has been tested with human whole blood, bone marrow and buffy coat samples prepared from human whole blood collected in EDTA, citrate or heparin tubes.

b. This kit has been tested with human whole blood and buffy coat samples processed fresh and stored frozen (stored at –65°C or lower) prior to DNA purification. Bone marrow samples have been tested stored frozen (stored at –65°C or lower) prior to DNA purification. Thaw frozen samples before processing.

The total yield of genomic DNA from whole blood, buffy coat, and bone marrow samples depends on the sample volume and number of white blood cells/ml.

1. Mix all blood and buffy coat samples for at least 5 minutes at room temperature. Mix all bone marrow samples for at least 30 minutes at room temperature.
2. Prepare incubation tubes that will fit into the heating block.
3. Add 30µl of Proteinase K (PK) Solution to each incubation tube.
4. Add sample (up to 300µl) to each incubation tube.
5. Vortex each tube for 10 seconds.
6. Add 300µl of Lytic Enhancer (LE2) to each incubation tube.
7. Add 300µl of Lysis Buffer to each incubation tube.
8. Vortex each tube for 10 seconds.
9. Incubate each tube in the 56°C heating block for 20 minutes. During this incubation, prepare cartridges as described below.
10. Vortex each tube for 10 seconds.
11. Transfer each lysate sample from the incubation tube to well #1 (the largest well in the cartridge) of a separate cartridge and mix well with the binding solution in well #1 by aspirating and dispensing 5–10 times after transfer to make a homogeneous mixture.

Maxwell® RSC Genomic DNA Kit

Instructions for Use of Product AS1880.

Quick Protocol

Maxwell® Automated DNA Purification

Cartridge Preparation

1. Place the cartridge to be used in the deck tray with well #1 (the largest well in the cartridge) facing away from the elution position, which is the numbered side of the tray.
2. Press down on the cartridge to snap it into position. Carefully peel back the seal so that all plastic comes off the top of the cartridge. Ensure that all sealing tape and any residual adhesive are removed before placing the cartridge in the instrument.
3. Add 15µl of RNase A Solution into well #3 of each cartridge.
4. Place a plunger in well #8 of each cartridge. Well #8 is the well closest to the elution tube.
5. Place an empty elution tube into the elution tube position for each cartridge. Add 50–200µl of Elution Buffer to the bottom of each elution tube.

   Note: Use only the Elution Tubes (0.5ml) provided in the kit; other tubes may be incompatible with supported Maxwell® Instruments.
6. Follow the instrument run instructions in the *Maxwell® RSC Genomic DNA Kit Technical Manual* #TM708.

Figure 1. Setup and configuration of deck trays. Elution Buffer is added to the elution tubes as shown. Plungers are in well #8 of the cartridge. Deck tray shown is from the Maxwell® RSC Instrument (Cat.# AS4500).

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Additional protocol information is in Technical Manual #TM708, available online at: **www.promega.com**