Maxwell® RSC PureFood GMO and Authentication Kit for Food, Feed and Seed Samples

Instructions for Use of Product AS1600.

Promega

Quick Protocol

Preparing Food, Feed or Seed Samples for DNA Purification

This Quick Protocol provides instructions for use of the Maxwell® RSC PureFood GMO and Authentication Kit with the Maxwell® RSC Instrument to purify DNA from food, seed or feed samples. For detailed instructions, including information on instrument setup and troubleshooting, please refer to the *Maxwell® RSC PureFood GMO and Authentication Kit Technical Manual* #TM473, available at: **www.promega.com/protocols/**

Materials to Be Supplied by the User

- microcentrifuge tubes, 1.5ml or 2.0ml
- sterile, aerosol-resistant pipette tips
- heat block
- microcentrifuge
- starting material (e.g., ground seed, ground feed or chopped or ground food; see Technical Manual #TM473 for more information, including Large Sample Lysis for processing up to 2g of sample)

Preprocessing Food, Feed or Seed Samples

Samples that are already ground (e.g., flour) or that easily break into small pieces do not need additional grinding. However, intact samples need to be finely chopped or ground for better sample disruption. Use a mechanical bead-beating device or mortar and pestle with liquid nitrogen to grind samples. See Technical Manual #TM473 for instructions.

Lysing Food, Feed or Seed Samples

1. Place up to 200mg ground food, feed or seed in the bottom of each microcentrifuge tube.
2. Add 1ml of CTAB Buffer to each tube.
3. Add 20µl of RNase A Solution and 40µl of Proteinase K (PK) Solution to each tube.

   Note: If you are processing a large number of samples, combine sufficient volumes of CTAB Buffer, Proteinase K (PK) Solution and RNase A Solution immediately before use, and add 1ml of this cocktail to each sample.
4. Tap, invert and vigorously vortex tubes until the sample is resuspended. Note that the shape of a 2.0ml microcentrifuge tube may make resuspension easier.
5. Place in a heat block at 65°C for 30 minutes. For difficult samples, use a shaking heat block (e.g., Thermomixer® at 600rpm) and extend the incubation an additional 2 hours.
6. Prepare RSC cartridges as described in Preparing the Cartridge section during the incubation.
7. After incubation, invert or vortex tubes with lysate to mix thoroughly.
8. Place tubes with lysate into a microcentrifuge and spin at room temperature for 10 minutes at ≥16,000 × *g* to separate any solids and oils.
9. Add 300ul Lysis Buffer to Well #1 of the reagent cartridge.
10. Transfer only 300µl of clear lysate sample into well #1 of the reagent cartridge. Avoid pipetting any solid material from the bottom of the tube or on the surface of the liquid. Also avoid oil on the surface. Transferring these materials may inhibit downstream assays. If necessary, transfer cleared lysate to a new tube and centrifuge again to avoid oils and solids.
11. Proceed to Running the Method on the Maxwell® RSC Instrument (Cat.# AS4500) for DNA purification.

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Automated DNA Purification

Preparing the Cartridge

1. Place the cartridges to be used in the Maxwell® RSC Cartridge Rack with the labeled side facing away from the Elution Tube.
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 cartridges in the instrument.

   Note: If you are processing fewer than 16 samples, center the cartridges on the cartridge rack.
3. Place a CSC/RSC Plunger in well #8 of each cartridge. Well #8 is the well closest to the Elution Tube. **Note:** Use only the plungers provided in the Maxwell® RSC PureFood GMO and Authentication Kit.
4. Place 0.5ml Elution Tubes in the front of the Maxwell® RSC Cartridge Rack. Add 100µl of Elution Buffer to the bottom of each Elution Tube.

Figure 1. The CSC/RSC plunger is placed in well #8 of the cartridge (the well closest to the Elution Tube), and lysates and Lysis Buffer are placed into well #1 of the cartridge.

Notes:

a. If Elution Buffer is on the side of the tube, the elution may be suboptimal.

b. Use only the 0.5ml Elution Tubes provided in the kit; other tubes may not work with the Maxwell® RSC Instrument.

Running the Method on the Maxwell® RSC Instrument (Cat.# AS4500)

1. Refer to the *Maxwell® RSC Instrument Operating Manual* #TM411 for detailed information on running methods. To run the PureFood GMO and Authentication protocol, the Maxwell® RSC PureFood GMO and Authentication method must be installed on your instrument. The method is available at: **www.promega.com/resources/tools/maxwellrscmethod/**. See the *Maxwell® RSC Methods Installation Technical Manual* #TM435 for instructions.
2. Follow the instrument run instructions in the *Maxwell® RSC PureFood GMO and Authentication Kit Technical Manual* #TM473.

Additional protocol information in Technical Manual #TM473, available online at: **www.promega.com**

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