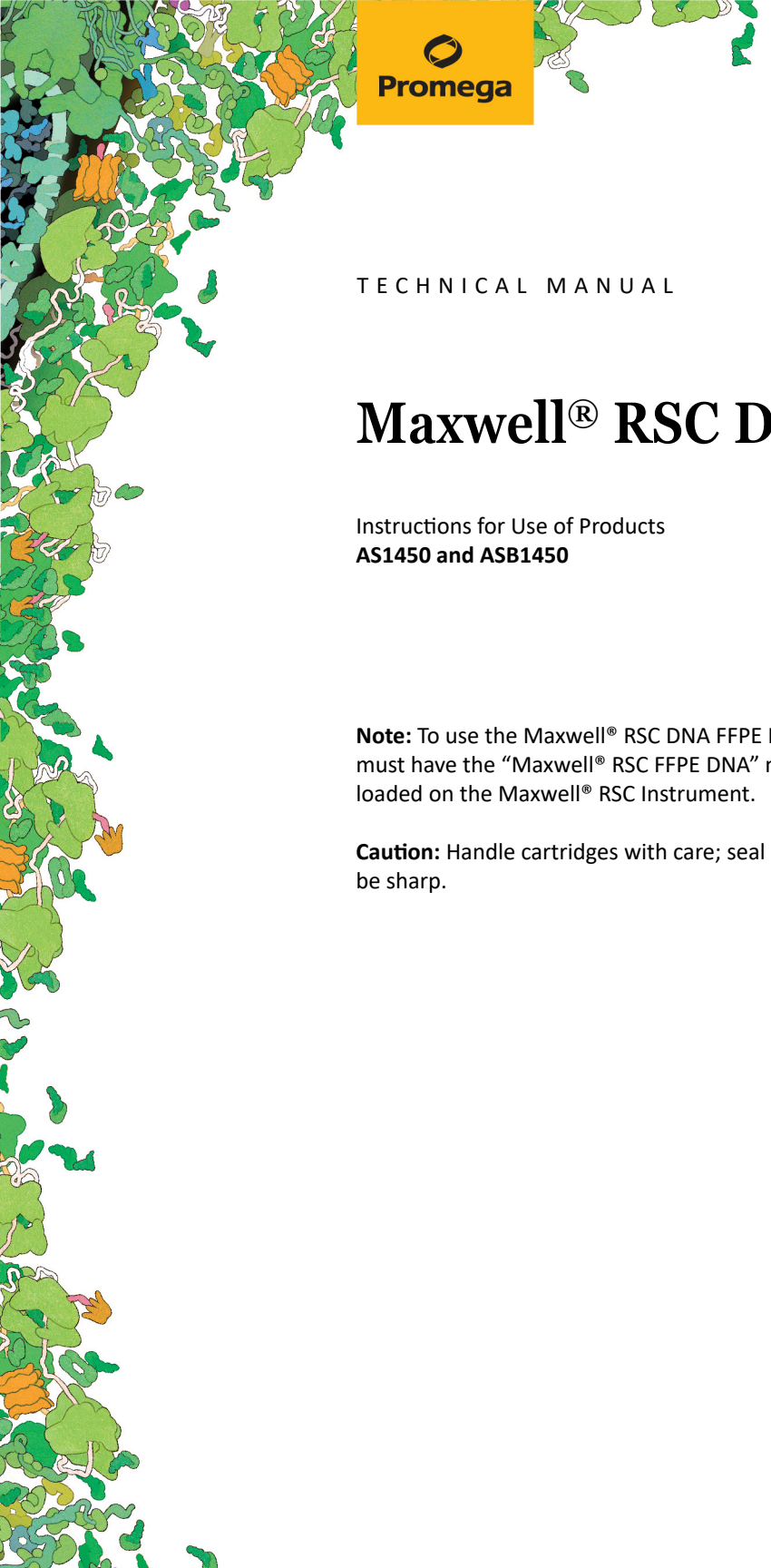


TECHNICAL MANUAL

Maxwell® RSC DNA FFPE Kit

Instructions for Use of Products
AS1450 and ASB1450

Note: To use the Maxwell® RSC DNA FFPE Kit, you must have the "Maxwell® RSC FFPE DNA" method loaded on the Maxwell® RSC Instrument.

Caution: Handle cartridges with care; seal edges may be sharp.

Revised 7/22
TM437

Maxwell® RSC DNA FFPE Kit

All technical literature is available at: www.promega.com/protocols/
Visit the web site to verify that you are using the most current version of this Technical Manual.
E-mail Promega Technical Services if you have questions on use of this system: techserv@promega.com

1. Description

The Maxwell® RSC DNA FFPE Kit[a] is used in combination with the Maxwell® Instruments specified in Table 1 to provide a simple method for efficient, automated purification of genomic DNA (gDNA) from FFPE (formalin-fixed, paraffin-embedded) mammalian tissue samples. The Maxwell® Instruments are designed for use with the predispensed reagent cartridges and additional reagents supplied in the kit, with preprogrammed purification methods, thereby maximizing simplicity and convenience. The Maxwell® Instruments can process from one to the maximum sample number in approximately 40 minutes. The purified gDNA can be used directly in downstream amplification-based assays such as PCR.

Table 1. Supported Instruments.

Instrument	Cat.#	Operating Manual
Maxwell® RSC	AS4500	TM411
Maxwell® RSC 48	AS8500	TM510
Maxwell® CSC 48 RUO Mode	AS8000	TM628
Maxprep™ Liquid Handler	AS9100, AS9101, AS9200, AS9201	TM509

The Maxwell® RSC DNA FFPE Kit purifies nucleic acid using paramagnetic particles, which provide a mobile solid phase to optimize sample capture, washing and purification of gDNA. The Maxwell® Instruments are magnetic particle-handling instruments that efficiently bind gDNA to the paramagnetic particles in the first well of a prefilled cartridge. The samples are processed through several washes before the gDNA is eluted.

Prior to extraction, samples can be preprocessed manually or using the Maxprep™ Liquid Handler. The Maxprep™ Liquid Handler will prepare samples for preprocessing in tubes and can add preprocessed samples from sample tubes to Maxwell® FFPE Cartridges, transfer plungers to Maxwell® FFPE Cartridges and dispense elution buffer to elution tubes. Follow the instruction set specific to the preprocessing option used.

Sample Considerations: DNA purification from FFPE tissue samples can be challenging due to tissue characteristics such as fibrosity, lipid composition, nuclease levels and the cell number available in the tissue section. In addition, variability in how the tissue is handled prior to and during fixation, including the duration for which the tissue is exposed to formalin during the tissue fixation process, greatly influences the degree of crosslinking and fragmentation of nucleic acids in the FFPE tissue. All these attributes may influence the quality and the amount of amplifiable nucleic acids that can be purified from FFPE tissue sections. During development, the Maxwell® RSC DNA FFPE Purification System was evaluated with a variety of human and mouse FFPE tissue types and formats (e.g., FFPE tissue sections on slides versus curls) to ensure optimal purification of the available amplifiable DNA.

2. Product Components and Storage Conditions

PRODUCT	SIZE	CAT.#
Maxwell® RSC DNA FFPE Kit	**48 preps**	**AS1450**

For Research Use Only. Not for use in diagnostic procedures. Sufficient for 48 automated isolations from FFPE samples. Cartridges are single-use only. Includes:

- 25ml Mineral Oil
- 20ml Lysis Buffer
- 2 × 1ml Proteinase K Solution
- 100µl Blue Dye
- 1ml RNase A Solution
- 48 Maxwell® FFPE Cartridges
- 1 Maxwell® RSC Plunger Pack (48 plungers)
- 50 Elution Tubes (0.5ml)
- 25ml Nuclease-Free Water

PRODUCT	SIZE	CAT.#
Maxwell® RSC DNA FFPE Kit	**144 preps**	**ASB1450**

For Research Use Only. Not for use in diagnostic procedures. Sufficient reagents for 144 automated purifications. Cartridges are single-use only. **Note:** ASB1450 is not recommended for use with the Maxprep™ Liquid Handler. Includes:

- 3 × 25ml Mineral Oil
- 3 × 20ml Lysis Buffer
- 6 × 1ml Proteinase K Solution
- 3 × 100µl Blue Dye
- 3 × 1ml RNase A Solution
- 144 Maxwell® FFPE Cartridges
- 3 × 50/pk Maxwell® CSC/RSC Plungers
- 3 × 50/pk Elution Tubes (0.5ml)
- 3 × 25ml Nuclease-Free Water

Storage Conditions: Store the Maxwell® RSC DNA FFPE Kit at ambient temperature (+15 to +30°C).

Safety Information: The Maxwell® FFPE Cartridges contain ethanol, isopropanol and guanidine hydrochloride. Ethanol and isopropanol should be considered flammable, harmful and irritants. Guanidine hydrochloride should be considered toxic, harmful and an irritant. Refer to the SDS for detailed safety information.

Maxwell® FFPE Cartridges are designed to be used with potentially infectious substances. Wear protection (e.g., gloves and goggles) when handling infectious substances. Adhere to your institutional guidelines for the handling and disposal of all infectious substances when used with this system.

Caution: Handle cartridges with care; seal edges may be sharp.

2. Product Components and Storage Conditions (continued)

For Preprocessing with the Maxprep™ Liquid Handler

PRODUCT	SIZE	CAT.#
2.0ml Deep Well Plates (Sterile)	60/pack	AS9307
2.0ml Deep Well Plates (Non-Sterile)	60/pack	AS9309
Maxprep™ 1000µl Conductive Disposable Tips, Filtered	40/box	AS9303
Maxprep™ 300µl Conductive Disposable Tips, Filtered	60/box	AS9302
Maxprep™ Reagent Reservoir, 50ml	28/pack	AS9304
Maxwell® RSC Plunger Pack	48/pack	AS1670
Maxwell® CSC/RSC Plungers	50/pack	AS1331
Maxprep™ Plunger Holder	1 each	AS9408
Maxprep™ 3-Position Reagent Tube Holder	1 each	AS9409

3. Sample Preparation

Materials to Be Supplied By the User

- microcentrifuge
- 1.5–2.0ml tubes for incubation of samples (e.g., Microtubes, 1.5ml; Cat.# V1231)
- FFPE tissue sections up to a total input volume of 2.0mm^3
  Note: Store samples at room temperature (15–30°C).
- razor blades (**Note:** Use caution when using razor blades to scrape samples from slides.)

3.A. Sample Information

The Maxwell® RSC DNA FFPE Kit is only intended for use with FFPE tissue samples. It is not intended for use with nonFFPE tissue samples, such as fresh or frozen tissue samples.

The Maxwell® RSC DNA FFPE kit performance was evaluated with FFPE tissue samples prepared with 10% neutral-buffered formalin.

The Maxwell® RSC DNA FFPE Kit performance was evaluated by isolating DNA from FFPE mammalian (mouse and human) tissue input volume of 0.02–2.0mm^3.

3.B. Preparation of FFPE Samples

Place the FFPE tissue section into a 1.5ml or 2.0ml microcentrifuge tube. If using slide-mounted tissue sections, scrape section off the slide using a clean razor blade. Centrifuge the tube at maximum speed for 15 seconds to collect the sample at the bottom of the tube, if necessary.

Note: FFPE tissue sections with a total volume of up to 2mm^3 can be used.

4. Manual Preprocessing

4.A. Preprocessing of FFPE Section Samples

Materials to Be Supplied by the User

- microcentrifuge
- pipettors and pipette tips for sample transfer into prefilled reagent cartridges
- heating blocks set at 56°C and 80°C (**Note:** Heating blocks set at 56°C and 70°C are needed if performing the optional overnight incubation.)

1. Add 300µl of Mineral Oil to the sample tubes. Vortex for 10 seconds.
2. Heat the samples at 80°C for 2 minutes. Place the samples at room temperature while the master mix is prepared.
3. Prepare a master mix of the Lysis Buffer, Proteinase K Solution and Blue Dye as shown in the table:

Reagent	Amount/Reaction	Reactions (number to be run + 2)	Total
Lysis Buffer	224µl	n + 2	224 × (n + 2)µl
Proteinase K	25µl	n + 2	25 × (n + 2)µl
Blue Dye	1µl	n + 2	1 × (n + 2)µl

For fewer than six samples, prepare enough master mix for n + 1 samples.

Note: Use the master mix within 1 hour of preparation. Do not store master mix for later use.

4. Add 250µl of master mix to each sample tube, and vortex for 5 seconds.
5. Centrifuge at 10,000 × *g* for 20 seconds to separate layers. If a pellet is present in the aqueous layer (lower, blue layer), gently mix pellet and aqueous phase with a pipette.
6. Transfer the sample tubes to a 56°C heating block and incubate for 30 minutes.
7. Choose one of the following incubation times and temperatures:

   a. **Standard method:** Transfer the sample tubes to 80°C heating block and incubate for 4 hours.

   b. **Optional method:** Incubate the sample tubes overnight (14–18 hours) at 70°C.

   Note: For lower sample input volumes (less than 0.1mm^3), the optional overnight incubation at 70°C may not be optimal. Use the standard method of 4 hours at 80°C if the overnight incubation fails to purify sufficient DNA concentration for lower input volume samples.

8. Remove the sample tubes from the heating block, and allow the samples to cool to room temperature for 5 minutes.
9. Add 10µl of RNase A to the aqueous (blue) phase in each sample tube. Mix by pipetting.
10. Incubate sample tubes for 5 minutes at room temperature (15–30°C). During the incubation, refer to Section 4.B to begin cartridge preparation.
11. Centrifuge the sample tubes at full speed in a microcentrifuge for 5 minutes.
12. Immediately transfer the blue, aqueous phase to well #1 of a Maxwell® FFPE Cartridge.

4.B. Manual Preparation of Maxwell® FFPE Cartridge

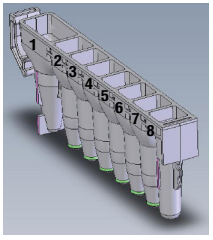
1. Change gloves before handling Maxwell® FFPE Cartridges, RSC Plungers and Elution Tubes (0.5ml). Place the cartridges to be used in the deck tray(s) with well #1 (the largest well in the cartridge) facing away from the elution tubes. Press down on the cartridge to snap it into position. Carefully peel 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.
2. Place one plunger into well #8 of each cartridge.
3. Place an empty elution tube into the elution tube position for each cartridge in the deck tray(s).
4. Add 50µl of Nuclease-Free Water to the bottom of each elution tube.

   Note: Only use the Nuclease-Free Water provided in the Maxwell® RSC DNA FFPE Kit. Use of other elution buffers may impact DNA purification.
5. Proceed to Section 6, Maxwell® Instrument Setup and Run.

   Notes:

   a. Specimen or reagent spills on any part of the deck tray should be cleaned with a detergent-water solution, followed by a bacteriocidal spray or wipe and then water. Do not use bleach on instrument parts.

   b. Use only the 0.5ml Elution Tubes provided in the kit; other tubes may be incompatible with the Maxwell® Instrument.



User Adds to Wells

1. Sample lysates

8. RSC Plunger

Figure 1. Maxwell® FFPE Cartridge contents.

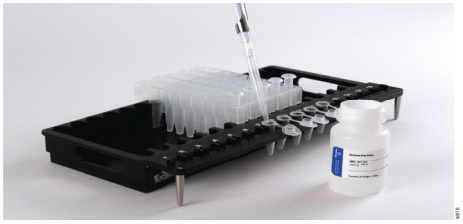


Figure 2. Setup and configuration of the deck trays. Nuclease-Free Water is added to the elution tubes as shown. Plungers are in well #8 of the cartridge.

5. Maxprep™ Preprocessing

Materials to Be Supplied by the User

- heating blocks set at 56°C and 80°C (**Note:** Heating blocks set at 56°C and 70°C are needed if performing the optional overnight incubation.)

5.A. FFPE Lysis Method Run (First Method)

FFPE samples are processed through two preprocessing methods on the Maxprep™ Liquid Handler. The first preprocessing method prepares and dispenses the lysis mix to the FFPE samples in 1.5ml or 2.0ml tubes. After this the user will remove the tubes from the Maxprep™ Liquid Handler for incubation at 56°C for 30 minutes followed by second incubation according to one of the following options:

a. **Standard method:** Transfer the sample tubes to 80°C heating block and incubate for 4 hours.

b. **Optional method:** Incubate the sample tubes overnight (14–18 hours) at 70°C.

Note: For lower sample input volumes (less than 0.1mm^3), the optional overnight incubation at 70°C may not be optimal. Use the standard method of 4 hours at 80°C if the overnight incubation fails to purify sufficient DNA concentration for lower input volume samples.

1. Turn on the Maxprep™ Liquid Handler and PC. Log in to the PC, and start the Maxprep™ software on the PC by double-clicking the desktop icon.
2. Touch **Start** to access the 'Methods' screen.
3. On the 'Methods' screen, touch the FFPE Lysis Reaction Preparation preprocessing method or laboratory-specific variant of the FFPE Lysis Reaction Preparation preprocessing method.
4. Verify that the appropriate preprocessing method or variant method has been selected, and touch the **Proceed** button. Close the instrument door and touch the **Run** button on the method run screen to start the run.
5. When prompted, enter the sample number.
6. Follow instrument setup instructions displayed in the method. You will be directed by the Maxprep™ software where to place the following items on the instrument:
    - Maxprep™ 3-Position Reagent Tube Holder with up to 3 Proteinase K Solution tubes
    - Maxprep™ Reagent Reservoir, 50ml with Lysis Buffer
    - Maxprep™ Reagent Reservoir, 50ml with Mineral Oil
    - 10mm diameter tube carriers with FFPE sections in 1.5ml flip-cap or 2.0ml screw-cap tubes (all tubes within a carrier must be of the same type)
    - 2.0ml Deep Well Plate [(Sterile; Cat.# AS9307) or (Non-Sterile; Cat.# AS9309)]
    - Maxprep™ 1000µl Conductive Disposable Tips, Filtered (2; one rack may be partially full)
    - Maxprep™ 300µl Conductive Disposable Tips, Filtered (rack may be partial or full)

5.A. FFPE Lysis Method Run (First Method; continued)

7. Close the instrument door, and touch the **Next** button to start the automated preprocessing setup of samples.

5.B. Maxprep™ Liquid Handler Preprocessing Protocol (FFPE Lysis)

The Maxprep™ Liquid Handler will prepare samples prior to lysis incubations. The following steps are performed by the Maxprep™ Liquid Handler:

1. Mineral Oil is transferred to the Nunc 2.0ml Deep Well Plate for heating.
2. The system prepares a lysis reaction in the input sample tubes consisting of the following components:
   - 25µl of Proteinase K Solution
   - 224µl of Lysis Buffer
   - 300µl of heated Mineral Oil

   Note: While not necessary for automated processing, you can optionally add Blue Dye solution to the Lysis Buffer that is placed on the system at a ratio of 1µl of Blue Dye to each 224µl of Lysis Buffer.
3. Method is complete. Open instrument door and remove the sample tubes. Remove used tips from the waste bin and discard as hazardous waste following your institution's recommended guidelines. Either discard or tightly cap and store remaining reagents.

Consumables for Maxprep™ preprocessing methods are designed to be used with potentially infectious substances. Use appropriate protective equipment (e.g., gloves and goggles) when handling infectious substances. Adhere to your institutional guidelines for the handling and disposal of all infectious substances when used with this system.

5.C. FFPE Sample Incubation

After addition of lysis components to the sample tubes containing FFPE sections, remove sample tubes from the Maxprep™ Liquid Handler and perform the following incubation steps for all tubes:

1. Centrifuge the sample tubes at maximum speed in a microcentrifuge for 90 seconds.
2. Transfer the sample tubes to a 56°C heating block and incubate for 30 minutes.
3. Choose one of the following incubation times and temperatures:

   a. **Standard method:** Transfer the sample tubes to 80°C heating block and incubate for 4 hours.

   b. **Optional method:** Incubate the sample tubes overnight (14–18 hours) at 70°C.

   Note: For lower sample input volumes (less than 0.1mm^3), the optional overnight incubation at 70°C may not be optimal. Use the standard method of 4 hours at 80°C if the overnight incubation fails to purify sufficient DNA concentration for lower input volume samples.
4. Place the sample tubes back into the 10mm diameter tube carriers for the second Maxprep™ preprocessing method.

5.D. Maxprep™ Cartridge Preparation (Second Method)

Samples are returned to the Maxprep™ Liquid Handler for the second preprocessing method that will perform RNase treatment, deck tray preparation and sample transfer to cartridges.

1. Turn on the Maxprep™ Liquid Handler and PC. Log in to the PC, and start the Maxprep™ software on the PC by double-clicking the desktop icon.
2. Touch **Start** to access the 'Methods' screen.

   On the 'Methods' screen, select a method using one of the two options below:

   a. Touch the Maxwell® RSC DNA FFPE preprocessing method or laboratory-specific variant of the Maxwell® RSC DNA FFPE preprocessing method.

   b. Use a bar code reader to scan the 2D bar code on the kit box to filter the available methods for the Maxwell® RSC DNA FFPE Kit. Touch the Maxwell® RSC DNA FFPE preprocessing method or laboratory-specific variant of the Maxwell® RSC DNA FFPE preprocessing method if desired.
3. Verify that the appropriate preprocessing method or variant method has been selected, and touch the **Proceed** button. Touch the **Run** button on the method run screen to start the run.
4. Enter any method-specific variables (Sample Number, Elution Volume).
5. Prior to placing Maxwell® RSC or Maxwell® RSC 48 Deck Tray(s) on the instrument, prepare the deck tray(s) with cartridges and elution tubes. Change gloves before handling Maxwell® FFPE Cartridges, RSC Plungers and Elution Tubes (0.5ml). Place the cartridges to be used in the deck tray(s) with well #1 (the largest well in the cartridge) facing away from the elution tubes. 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. Place an empty elution tube into the elution tube position for each cartridge in the deck tray(s).

   Notes:

   a. Specimen or reagent spills on any part of the deck tray should be cleaned with a detergent-water solution, followed by a bacteriocidal spray or wipe and then water. Do not use bleach on any instrument parts.

   b. Use only the 0.5ml Elution Tubes provided in the kit; other tubes may be incompatible with the Maxwell® Instrument.

5.D. Maxprep™ Cartridge Preparation (Second Method; continued)

6. Follow instrument setup instructions displayed in the method. You will be directed by the Maxprep™ software where to place the following items on the instrument:
    - Maxprep™ Plunger Holders and Maxwell® RSC Plunger Packs (2; one may be partially filled)
    - Maxwell® RSC 48 Front Deck Tray or Maxwell® RSC Deck Tray containing Maxwell® FFPE Cartridges with seals removed and open elution tubes
    - Maxwell® RSC 48 Back Deck Tray or Maxwell® RSC Deck Tray containing Maxwell® FFPE Cartridges with seals removed and open elution tubes
    - Maxprep™ 3-Position Reagent Tube Holder with up to 3 RNase A Solution Tubes
    - Maxprep™ Reagent Reservoir, 50ml with Nuclease-Free Water
    - 10mm diameter tube carriers with 1.5ml flip-cap or 2.0ml screw-cap tubes containing centrifuged FFPE sections (all tubes within a carrier must be of the same type)
    - Maxprep™ 1000µl Conductive Disposable Tips, Filtered (2; one rack may be partially full)
    - Maxprep™ 300µl Conductive Disposable Tips, Filtered (rack may be partial or full)
7. Close the instrument door, and touch the **Next** button to start the automated preprocessing of samples.

5.E. Maxprep™ Liquid Handler Preprocessing Protocol (DNA FFPE)

The Maxprep™ Liquid Handler will prepare samples prior to extraction using the Maxwell® RSC or Maxwell® RSC 48 Instrument. The following steps are performed by the Maxprep™ Liquid Handler:

1. Plungers are transferred to each of the cartridges in the Maxwell® RSC or Maxwell® RSC 48 Deck Tray(s). The specified volume of Nuclease-Free Water is transferred to the elution tubes for each position in the Maxwell® RSC or Maxwell® RSC 48 Deck Tray(s).
2. The system transfers 10µl RNase A Solution to the aqueous phase of the sample lysate and incubates at room temperature (15–30°C) for 5 minutes.
3. The system transfers the sample lysate from each sample tube to its corresponding Maxwell® FFPE cartridge.
4. Method is complete. Open instrument door and move the deck tray(s) to the Maxwell® RSC or Maxwell® RSC 48 Instrument for extraction. Remove primary sample tubes and used tips from the waste bin of the instrument, and discard as hazardous waste following your institution's recommended guidelines. Either discard or tightly cap and store remaining reagents.

Consumables for Maxprep™ preprocessing methods are designed to be used with potentially infectious substances. Use appropriate protective equipment (e.g., gloves and goggles) when handling infectious substances. Adhere to your institutional guidelines for the handling and disposal of all infectious substances when used with this system.

6. Maxwell® Instrument Setup and Run

Refer to the *Maxwell® RSC Instrument Operating Manual* #TM411 or *Maxwell® RSC 48 Instrument Operating Manual* #TM510 for detailed information.

1. Turn on the Maxwell® Instrument and Tablet PC. Sign in to the Tablet PC, and start the Maxwell® software by double-touching the icon on the desktop. The instrument will power up, proceed through a self test and home all moving parts.
2. Touch **Start** to access the 'Methods' screen. When running in Portal mode, scan the bar code on the deck tray(s). After data has been returned from the Portal database, touch **Continue** to use the sample tracking information for the deck tray(s) or touch **New** to start a run and enter new sample tracking information.
3. On the 'Methods' screen, if a method has not been selected by scanning the bar code on the deck trays, select a method using one of the two options below:
   a. Touch the DNA FFPE method.
   b. Use a bar code reader to scan the 2D bar code on the kit box to automatically select the appropriate method.
4. Verify that the DNA FFPE method has been selected, and touch the **Proceed** button. If requested by the software, enter any kit lot and expiration information required by the Administrator.
5. On the 'Cartridge Setup' screen (if shown), touch the cartridge positions to select/deselect any positions to be used for this extraction run. Enter any required sample tracking information, and touch the **Proceed** button to continue.

   Note: When using the Maxwell® RSC 48 Instrument, use the **Front** and **Back** buttons to select/deselect cartridge positions on each deck tray.
6. After the door has been opened, confirm that all Extraction Checklist items have been performed. Verify that samples were added to well #1 of the cartridges, cartridges are loaded on the instrument, uncapped elution tubes are present with Elution Buffer and plungers are in well #8. Transfer the deck tray(s) containing the prepared cartridges onto the Maxwell® Instrument platform.

   Inserting the Maxwell® Deck Tray: Hold the deck tray by the sides to avoid dislodging cartridges from the deck tray. Ensure that the deck tray is placed in the Maxwell® Instrument with the elution tubes closest to the door. Angle the back of the deck tray downward and place into the instrument so that the back of the deck tray is against the back of the instrument platform. Press down on the front of the deck tray to firmly seat the deck tray on the instrument platform. If you have difficulty fitting the deck tray on the platform, check that the deck tray is in the correct orientation. Ensure the deck tray is level on the instrument platform and fully seated.

   Note: When using the Maxwell® RSC 48 Instrument, check the identifier on the Maxwell® RSC 48 Deck Tray to determine whether it should be placed in the front or back of the instrument.

7. Touch the **Start** button to begin the extraction run. The platform will retract, and the door will close.

   Note: When using the Maxwell® RSC 48 Instrument, if the Vision System has been enabled, the deck tray(s) will be scanned as the door retracts. Any errors in deck tray setup (e.g., plungers not in well #8, elution tubes not present and open) will cause the software to return to the 'Cartridge Setup' screen, and problem positions will be marked with an exclamation point in a red circle. Touch the exclamation point for a description of the error and resolve all error states. Touch the **Start** button again to repeat deck tray scanning and begin the extraction run.

   Warning: Pinch point hazard.

   The Maxwell® Instrument will immediately begin the purification run. The screen will display information including the user who started the run, the current method step being performed and the approximate time remaining in the run.

   Notes:

   a. Touching the **Abort** button will abandon the run. All samples from an aborted run will be lost.

   b. If the run is abandoned before completion, you may be prompted to check whether plungers are still loaded on the plunger bar. If plungers are present on the plunger bar, you should perform Clean Up when requested. If plungers are not present on the plunger bar, you can choose to skip Clean Up when requested. The samples will be lost.

6. Maxwell® Instrument Setup and Run (continued)

8. Follow on-screen instructions at the end of the method to open the door. Verify that plungers are located in well #8 of the cartridge at the end of the run. If plungers are not removed from the plunger bar, follow the instructions in the *Maxwell® RSC Instrument Operating Manual* or the *Maxwell® RSC 48 Instrument Operating Manual* to perform a Clean Up process to attempt to unload the plungers.

9. Remove the deck tray(s) from the instrument. Remove elution tubes containing DNA, and cap the tubes. If paramagnetic particles are present in the elution tubes, centrifuge at 10,000–20,000 × *g* for 2–5 minutes. After the run is complete, the extraction run report will be displayed. From the 'Report View' screen, you can print or export this report or both.

10. Remove the cartridges and plungers from the deck tray(s), and discard as hazardous waste following your institution's recommended guidelines. Do not reuse reagent cartridges, plungers or elution tubes.

Note: Ensure samples are removed before performing any required UV light treatment to avoid damage to the nucleic acid.

7. Recommendations for Quantitation

Determine whether the purified DNA sample yield and purity meets the input requirements for the appropriate downstream assay prior to use in that assay. Kit performance was evaluated based upon the purification of amplifiable DNA. Other means of quantitation including absorbance or fluorescent dye binding, may not correlate with amplification (1). Absorbance readings for purified FFPE samples may overestimate yield; we recommend using other methods for determining yield (1).

8. Troubleshooting

For questions not addressed here, please contact your local Promega Branch Office or Distributor. Contact information available at: **www.promega.com.** E-mail: **techserv@promega.com**

Symptoms	Causes and Comments
Lower than expected concentration of DNA in eluate	Kit performance has been evaluated by isolating DNA from from FFPE tissue samples up to 2.0mm^3. It is not designed for sample volumes larger than 2.0mm^3. Only use sections that meet the size specification. (A typical FFPE section should yield amplifiable DNA depending on tissue size, cellularity, formalin fixation condition and handling.)
	The kit is intended for use with FFPE mammalian tissue samples. It is not intended for use with nonFFPE tissue samples, such as fresh or frozen tissue samples or with FFPE tissue samples collected from nonmammalian tissues.
	The kit performance was evaluated with FFPE tissue samples prepared with 10% neutral-buffered formalin. Repeat the purification with FFPE tissue sections prepared with 10% neutral-buffered formalin.
	The kit performance was not evaluated with stained FFPE tissue curls or sections. Repeat the purification with unstained FFPE curl or section.
	Kit performance was evaluated based upon the purification of amplifiable DNA. Other means of quantitation including absorbance or fluorescent dye binding may not correlate with amplification. Use an amplification quantitation method to assess yield.
	For lower sample input volumes (less than 0.1mm^3), the optional overnight incubation at 70°C may not be optimal. Use the standard decrosslinking of 4 hours at 80°C if the overnight incubation fails to purify sufficient DNA concentration for lower input volume samples.

8. Troubleshooting (continued)

Symptoms	Causes and Comments
Lower than expected quality (the eluate contains highly fragmented DNA or inhibitors of downstream assays)	Formalin fixation and subsequent crosslink reversal will fragment DNA. If the DNA is fragmented prior to extraction and purification, fragmented DNA will be purified with this kit. Repeat with an adjacent section to assess whether the fragmentation is inherent to the sample or if the DNA is fragmented during purification.
	Some amplification assays are particularly sensitive to the presence of inhibitors. Downstream assay controls should identify the presence of an amplification inhibitor in the eluate. It is the user's responsibility to verify the compatibility of this product with downstream assays.

9. Reference

1. Bonin, S. *et al*. (2010) Multicentre validation study of nucleic acids extraction from FFPE tissues. *Virchows Arc.* **425**, 309–17.

10. Related Products

Instrument and Accessories

Product	Size	Cat.#
Maxwell® RSC Instrument	1 each	AS4500
Maxwell® RSC 48 Instrument	1 each	AS8500
Maxwell® RSC Plunger Pack	48/pack	AS1670
Maxwell® RSC/CSC Deck Tray	1 each	SP6019
Maxwell® RSC/CSC 48 Front Deck Tray	1 each	AS8401
Maxwell® RSC/CSC 48 Back Deck Tray	1 each	AS8402
Maxprep™ Carrier, Maxwell® RSC	1 each	AS9402
Maxprep™ Carrier, Maxwell® RSC 48 Front	1 each	AS9403
Maxprep™ Carrier, Maxwell® RSC 48 Back	1 each	AS9404
Maxprep™ Liquid Handler, RSC Carriers	1 each	AS9100
Maxprep™ Liquid Handler, RSC Carriers w/UV light	1 each	AS9101
Maxprep™ Liquid Handler, RSC 48 Carriers	1 each	AS9200
Maxprep™ Liquid Handler, RSC 48 Carriers w/UV light	1 each	AS9201
Maxprep™ 1000µl Conductive Disposable Tips, Filtered	40/box	AS9303
Maxprep™ 300µl Conductive Disposable Tips, Filtered	60/box	AS9302
Maxprep™ Reagent Reservoir, 50ml	28/pack	AS9304
Maxprep™ Waste Bags, Clear	100/box	AS9305
2.0ml Deep Well Plates (Sterile)	60/pack	AS9307
2.0ml Deep Well Plates (Non-Sterile)	60/pack	AS9309
Maxprep™ Plunger Holder	1 each	AS9408
Maxprep™ 3-Position Reagent Tube Holder	1 each	AS9409
RNase A Solution, 4mg/ml	1ml	A7973

Maxwell® RSC Reagent Kits

For a list of available Maxwell® RSC purification kits, visit: **www.promega.com**

11. Summary of Change

The following change was made to the 7/22 revision of this document:

Updated Table 1 in Section 1.

[a]U.S. Pat. No. 7,329,488 and Korean Pat. No. 10-0483684.