

TECHNICAL MANUAL

Maxwell[®] RSC FFPE Plus DNA Kit

Instructions for Use of Products
AS1720 and AS1770

Note: To use the Maxwell[®] RSC FFPE Plus DNA Kit, you must have the “FFPE Plus DNA” method loaded on the Maxwell[®] Instrument. See the list of supported Maxwell[®] Instruments in Section 1.

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



Maxwell[®] RSC FFPE Plus DNA 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.....	2
2. Product Components and Storage Conditions	3
3. Sample Preparation.....	4
3.A. Sample Information.....	4
3.B. Preparation of FFPE Samples	4
3.C. Preparation of Proteinase K Solution	4
4. Manual Preprocessing	5
4.A. Preprocessing of FFPE Section Samples	5
4.B. Maxwell [®] RSC FFPE Plus DNA Cartridge Preparation	5
5. Maxprep [™] Preprocessing	6
5.A. FFPE Plus DNA Lysis Reaction Preparation Method Run (First Method).....	6
5.B. Maxprep [™] Liquid Handler Preprocessing Protocol (FFPE Plus DNA Lysis Reaction Preparation).....	7
5.C. FFPE Sample Incubation	8
5.D. Maxprep [™] RSC FFPE Plus DNA Cartridge Preparation (Second Method)	8
5.E. Maxprep [™] Liquid Handler Preprocessing Protocol (Maxwell [®] RSC FFPE Plus DNA).....	9
6. Maxwell [®] Instrument Setup and Run	10
7. Troubleshooting.....	12
8. Reference	12
9. Related Products.....	13
10. Summary of Changes	13

1. Description

The Maxwell[®] RSC FFPE Plus DNA Kit^(a) is used with Maxwell[®] Instruments to provide a simple method for efficient, automated purification of DNA (gDNA) from FFPE (formalin-fixed, paraffin-embedded) mammalian tissue samples. The Maxwell[®] Instruments are designed for use with predispensed reagent cartridges and preprogrammed purification processes, maximizing simplicity and convenience. Maxwell[®] methods for the RSC FFPE Plus DNA Kit can process from one to the maximum number of samples in as little as 25 minutes, following a 1 hour to overnight Proteinase K digestion. The purified DNA can be used directly in downstream amplification-based assays such as PCR.

Table 1. Supported Instruments

Instrument	Cat. #	Technical Manual
Maxwell [®] RSC	AS4500	TM411
Maxwell [®] RSC 48	AS8500	TM510
Maxwell [®] CSC (RUO Mode)	AS6000	TM573
Maxwell [®] FSC	AS4600	TM462
Maxprep [™] Liquid Handler	AS9100, AS9101 AS9200, AS9201	TM509

The Maxwell[®] RSC FFPE Plus DNA Kit purifies samples using paramagnetic particles, which provide a mobile solid phase to optimize sample capture, washing and purification of gDNA. Maxwell[®] Instruments are magnetic particle-handling instruments that efficiently bind gDNA to the paramagnetic particle 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 uses two methods to prepare samples for extraction. The first method prepares the sample lysis reactions in tubes containing FFPE samples. After the first method is complete, the user removes the tubes from the Maxprep[™] Liquid Handler and incubates them at 70°C for the desired amount of time. The second method adds preprocessed samples from sample tubes to Maxwell[®] RSC FFPE Plus DNA Cartridges, transfers plungers to Maxwell[®] RSC FFPE Plus DNA Cartridges and dispenses elution buffer to elution tubes. Follow the instruction set specific to the preprocessing option used.

Note: When running the Maxprep[™] Liquid Handler method for FFPE Plus DNA, it is necessary to purchase the Maxwell[®] RSC FFPE Plus DNA Kit for the Maxprep[™] Liquid Handler (Cat. # AS1770).

2. Product Components and Storage Conditions

PRODUCT	SIZE	CAT.#
Maxwell® RSC FFPE Plus DNA Kit	48 preps	AS1720

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

- 3 Proteinase K Tubes
- 35ml Incubation Buffer
- 40ml Lysis Buffer
- 48 Maxwell® RSC Cartridge (RSCM)
- 1 Maxwell® RSC Plunger Pack (48 plungers)
- 50 Elution Tubes (0.5ml)
- 25ml Nuclease-Free Water

PRODUCT	SIZE	CAT.#
Maxwell® RSC FFPE Plus DNA Kit for the Maxprep™ Liquid Handler	48 preps	AS1770

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

- 1 Maxwell® RSC FFPE Plus DNA Kit (See above)
- 25ml Mineral Oil

Storage Conditions: Store the Maxwell® RSC FFPE Plus DNA Kit and the Mineral Oil at ambient temperature (15–30°C). Upon receipt, store the Proteinase K tubes at –30°C to –10°C. Store the prepared Proteinase K solution at –30°C to –10°C.

Safety Information: The Maxwell® RSC Cartridges contain ethanol and guanidine thiocyanate. Ethanol should be considered flammable, harmful and an irritant. Guanidine thiocyanate should be considered toxic, harmful and an irritant. Wear gloves and follow standard safety procedures while working with these substances. Refer to the SDS for detailed safety information. Adhere to your institutional guidelines for the handling and disposal of all chemicals and harmful substances.



Maxwell® RSC 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.

For Preprocessing with the Maxprep™ Liquid Handler

PRODUCT	SIZE	CAT.#
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™ 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 (5–10µm thick with a size range of 20mm² to 200mm² for a total of up to 2.0mm³ of tissue)
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 FFPE Plus DNA Kit is only intended for use with FFPE tissue samples. It is not intended for use with non-FFPE tissue samples, such as fresh or frozen tissue samples.

The Maxwell[®] RSC FFPE Plus DNA Kit is not intended for use with tissue samples prepared with fixatives other than 10% neutral-buffered formalin.

The Maxwell[®] RSC FFPE Plus DNA Kit performance has been evaluated by isolating DNA from FFPE mammalian (mouse and human) tissue samples ranging in thickness from 5–10µm with a size range of 20mm² to 200mm² for a total of up to 2.0mm³.

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.

Note: Tissue sections ranging in thickness from 5–10µm thick with a size range of 20mm² to 200mm² for a total of up to 2.0mm³ can be used.

3.C. Preparation of Proteinase K Solution

Add 500µl of Nuclease-Free Water to each tube of lyophilized Proteinase K, and gently swirl each tube to dissolve. The final concentration of Proteinase K will be 20mg/ml. Dispense the Proteinase K solution into smaller aliquots that reflect usage, and store at –20°C for up to 2 years. The Proteinase K can be frozen and thawed up to five times with no significant loss in activity. Prior to use, Proteinase K should be thawed and stored on ice.

4. Manual Preprocessing

4.A. Preprocessing of FFPE Section Samples

Materials to Be Supplied by the User

- pipettors and pipette tips for sample transfer into prefilled reagent cartridges
- heat block set to 70°C
- vortex mixer

Note: FFPE samples should be centrifuged to the bottom of the tube before starting this protocol (See Section 3.B)

1. Overlay the samples with 20µl of stock 20mg/ml Proteinase K solution (prepared in Section 3.C) and 180µl of Incubation Buffer.
2. Close the tube cap and incubate the sample at 70°C for a timeframe of 1 hour to overnight.
Note: Samples incubated overnight are likely to yield more amplifiable gDNA.
3. Add 400µl of Lysis Buffer to each sample.
4. Vortex samples and centrifuge briefly at full speed to collect lysate at the bottom of the tube.
Note: Preprocessed samples can be stored at room temperature overnight if necessary. Do not refrigerate or freeze samples.
5. When ready to proceed with DNA purification using the Maxwell® Instrument, prepare the cartridges as described in Section 4.B. Transfer lysate to well #1 (the largest well) of the prepared Maxwell® RSC Cartridge and proceed to Section 6.

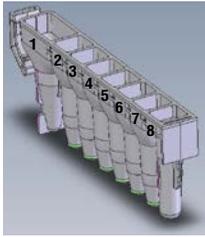
4.B. Maxwell® RSC FFPE Plus DNA Cartridge Preparation

1. Change gloves before handling Maxwell® RSC 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 in the deck tray(s).
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 FFPE Plus DNA Kit. Use of other elution buffers may impact DNA purification.
5. Proceed to Section 6, Maxwell® Instrument Setup and Run.

Notes:

1. 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.
2. Use only the 0.5ml Elution Tubes provided in the kit; other tubes may be incompatible with the Maxwell® Instrument.

4.B. Maxwell® RSC FFPE Plus DNA Cartridge Preparation (continued)



User Adds to Wells

1. Sample lysates
8. RSC Plunger

Figure 1. Maxwell® RSC FFPE Plus DNA Cartridge.



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

- heat block set to 70°C

5.A. FFPE Plus DNA Lysis Reaction Preparation Method Run (First Method)

FFPE samples are processed through two preprocessing methods on the Maxprep™ Liquid Handler. The first preprocessing method prepares the lysis reaction by dispensing the Proteinase K, Incubation Buffer and Mineral Oil 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 70°C for a time period of 1 hour to overnight.

Note: The Maxwell® RSC FFPE Plus DNA Kit for Maxprep™ Liquid Handler (Cat.# AS1770) must be used when running the Maxprep™ FFPE Plus DNA Lysis Reaction Preparation method.

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, select a method using one of the two options below:
 - a. Touch the FFPE Plus DNA Lysis Reaction Preparation preprocessing method or laboratory-specific variant of the FFPE Plus DNA Lysis Reaction Preparation 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 FFPE Plus DNA Kit. Touch the FFPE Plus DNA Lysis Reaction Preparation preprocessing method or laboratory-specific variant of the FFPE Plus DNA Lysis Reaction Preparation preprocessing method if desired.
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 to be processed.
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 1.5ml tubes
 - Maxprep™ Reagent Reservoir, 50ml with Incubation 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)
 - 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 setup of samples.

5.B. Maxprep™ Liquid Handler Preprocessing Protocol (FFPE Plus DNA Lysis Reaction Preparation)

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

1. Incubation Buffer (180µl) is transferred to the FFPE sample tubes.
2. Proteinase K (20µl) is transferred to the FFPE sample tubes.
3. Mineral Oil (300µl) is transferred to the FFPE sample tubes.
4. 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. Transfer the sample tubes to a 70°C heat block and incubate for a timeframe of 1 hour to overnight.
2. Place the sample tubes back into the 10mm diameter tube carriers for the second Maxprep™ preprocessing method.

5.D. Maxprep™ RSC FFPE Plus DNA Cartridge Preparation (Second Method)

Samples are returned to the Maxprep™ Liquid Handler for the second preprocessing method that will perform Lysis Buffer addition, 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 FFPE Plus DNA preprocessing method or laboratory-specific variant of the Maxwell® RSC FFPE Plus DNA 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 FFPE Plus DNA Kit. Touch the Maxwell® RSC FFPE Plus DNA preprocessing method or laboratory-specific variant of the Maxwell® RSC FFPE Plus DNA 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® Deck Tray(s) on the instrument, prepare the deck tray(s) with cartridges and elution tubes. Change gloves before handling Maxwell® FFPE Plus DNA Cartridges, 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:

1. 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.
2. Use only the 0.5ml Elution Tubes provided in the kit; other tubes may be incompatible with the Maxwell® Instrument.

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)
 - 24-position Maxwell® Front Deck Tray or 16-position Maxwell® Deck Tray containing Maxwell® FFPE Plus DNA Cartridges with seals removed and open elution tubes
 - 24-position Maxwell® Back Deck Tray or 16-position Maxwell® Deck Tray containing Maxwell® FFPE Plus DNA Cartridges with seals removed and open elution tubes
 - Maxprep™ Reagent Reservoir, 50ml with Lysis Buffer
 - Maxprep™ Reagent Reservoir, 50ml with Nuclease-Free Water
 - 10mm diameter tube carriers with 1.5ml flip-cap or 2.0ml screw-cap tubes containing lysed 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 (Maxwell® RSC FFPE Plus DNA)

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

1. Plungers are transferred to each of the cartridges in the Maxwell® Deck Tray(s). The specified volume of Nuclease-Free Water is transferred to the elution tubes for each position in the Maxwell® Deck Tray(s).
2. The system transfers 400µl of Lysis Buffer to the sample lysate in each sample tube and then transfers the sample to its corresponding Maxwell® RSC FFPE Plus DNA cartridge.
3. Method is complete. Open instrument door and move the deck tray(s) to the Maxwell® Instrument for extraction (Section 6). 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

For detailed information, refer to the Technical Manual specific to your Maxwell® Instrument.

Instrument	Technical Manual
Maxwell® RSC	TM411
Maxwell® RSC 48	TM510
Maxwell® CSC (RUO Mode)	TM573
Maxwell® FSC	TM462

- 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 proceed through a self test and home all moving parts.
- Touch **Start** to begin the process of running a method.
- Depending on your Maxwell® instrument model, use one of the following options to select a method:
 - When running in **Portal** mode, scan the bar code(s) on the deck tray(s). After data has been returned from the Portal software, press **Continue** to use the sample tracking information for the deck tray(s) or press **New** to start a run and enter new sample tracking information.
 - Scan or enter the 2D bar code information on the kit box to automatically select the appropriate method.
 - Touch the **FFPE Plus DNA** method.
- If applicable to your Maxwell® instrument model, verify that the FFPE Plus DNA method is selected, and press the **Proceed** button. If requested by the software, scan or enter any kit lot information required by the Administrator.
- On the 'Cartridge Setup' screen (if shown), touch the cartridge positions to select/deselect the positions to be used for this extraction run. Enter any required sample tracking information and touch the **Proceed** button to continue.

Note: When using a 48-position Maxwell® Instrument, use the **Front** and **Back** buttons to select/deselect cartridge positions on each deck tray.

- 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 a 48-position Maxwell® Instrument, check the identifier on the Maxwell® 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 a 48-position Maxwell® 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:

1. Touching the **Abort** button will abandon the run. All samples from an aborted run will be lost.
2. 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.
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 Technical Manual appropriate to your Maxwell® Instrument (see table above) 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. 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

Lower than expected concentration of DNA in eluate

Causes and Comments

Kit performance has been evaluated by isolating DNA from 5–10µm thick FFPE tissue samples ranging in size from 20mm² to 200mm² for a total of up to 2.0mm³. It was not designed for samples outside this range.

The kit is intended for use with FFPE mammalian tissue samples. It is not intended for use with non-FFPE tissue samples, such as fresh or frozen tissue samples or with FFPE tissue samples collected from non-mammalian tissues.

The kit is not intended for use with tissue samples prepared with fixatives other than 10% neutral-buffered formalin.

No claims are made for stained slides or sections. Repeat the purification with an unstained slide or section.

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.

8. Reference

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

9. 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	1 each	AS1670
Maxwell® RSC/CSC Deck Tray	1 each	SP6019
Maxwell® RSC 48 Front Deck Tray	1 each	AS8401
Maxwell® RSC 48 Back Deck Tray	1 each	AS8402
ClickFit Microtube, 1.5ml	1000/pack	V4741
Maxwell® FSC Instrument	1 each	AS4600
Maxwell® FSC Deck Tray	1 each	AS4016
Maxwell® CSC Instrument	1 each	AS6000
Maxprep™ Liquid Handler with RSC Carriers	1 each	AS9100
Maxprep™ Liquid Handler with RSC Carriers and UV Light	1 each	AS9101
Maxprep™ Liquid Handler with RSC 48 Carriers	1 each	AS9200
Maxprep™ Liquid Handler with RSC 48 Carriers and 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
Maxprep™ Plunger Holder	1 each	AS9408
Maxprep™ 3-Position Reagent Tube Holder	1 each	AS9409

Maxwell® RSC Reagent Kits

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

10. Summary of Changes

The following changes were made to the 12/19 revision of this document:

1. Added protocol for Maxprep™ Preprocessing, Section 5.
2. Added Maxprep™ description to Section 1 and Maxprep™ product components to Section 2.

[®]U.S. Pat. Nos. 6,027,945 and 6,368,800.

© 2019 Promega Corporation. All Rights Reserved.

Maxwell is a registered trademark of Promega Corporation.

Products may be covered by pending or issued patents or may have certain limitations. Please visit our Web site for more information.

All prices and specifications are subject to change without prior notice.

Product claims are subject to change. Please contact Promega Technical Services or access the Promega online catalog for the most up-to-date information on Promega products.