

TECHNICAL MANUAL

# Maxwell<sup>®</sup> RSC simplyRNA Blood Kit

Instructions for Use of Products  
**AS1380 and ASB1380**

**Note:** To use the Maxwell<sup>®</sup> RSC simplyRNA Blood Kit, you must have the “simplyRNA Blood” method loaded on the Maxwell<sup>®</sup> RSC Instrument.

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

# Maxwell<sup>®</sup> RSC simplyRNA Blood Kit

All technical literature is available at: [www.promega.com/protocols/](http://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](mailto:techserv@promega.com)

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## 1. Description

The Maxwell<sup>®</sup> RSC simplyRNA Blood Kit<sup>(a)</sup> is designed for isolation of total RNA from fresh (not frozen) whole blood collected in EDTA tubes. The simplyRNA Blood procedure purifies total RNA with minimal sample handling before automated purification on the Maxwell<sup>®</sup> RSC Instrument or Maxwell<sup>®</sup> RSC 48 Instrument. The Maxwell<sup>®</sup> RSC and Maxwell<sup>®</sup> RSC 48 Instruments are supplied with preprogrammed purification procedures and are designed for use with predisposed reagent cartridges, maximizing simplicity and convenience. The Maxwell<sup>®</sup> RSC Instrument can process up to 16 samples, and the Maxwell<sup>®</sup> RSC 48 Instrument can process up to 48 samples in about 50 minutes. The low elution volume results in concentrated high-quality RNA suitable for use in downstream applications such as quantitative RT-PCR (qRT-PCR).

## 1. Description (continued)

The Maxwell® RSC simplyRNA Blood Kit purifies samples using a paramagnetic particle that provides a mobile solid phase that optimizes sample capture, washing and purification of nucleic acid. The Maxwell® RSC and Maxwell® RSC 48 Instruments are magnetic particle-handling instruments that efficiently bind RNA to the paramagnetic particle in the first well of a prefilled cartridge. The samples are processed through a series of washes before the RNA is eluted.

Prior to extraction, samples can be preprocessed manually or using the Maxprep™ Liquid Handler. The Maxprep™ Liquid Handler will transfer samples from primary sample tubes, perform sample lysis prior to extraction, add lysed samples to Maxwell® RSC cartridges, transfer plungers to Maxwell® RSC cartridges, and dispense elution buffer to elution tubes. Follow the instruction set specific to the preprocessing option used.

## 2. Product Components and Storage Conditions

PRODUCT	SIZE	CAT.#
<b>Maxwell® RSC simplyRNA Blood Kit</b>	<b>48 preps</b>	<b>AS1380</b>

For Research Use. Sufficient for 48 automated isolations from fresh blood in EDTA collection tubes.  
Cartridges are single-use only. Includes:

- 4 × 100ml Cell Lysis Solution
- 30ml Homogenization Solution
- 20ml Lysis Buffer
- 2 × 1ml Proteinase K
- 900µl 1-Thioglycerol
- 2 vials DNase I (lyophilized)
- 50µl Blue Dye
- 48 Maxwell® RSC Cartridges
- 1 Maxwell® RSC Plunger Pack (48 Plungers)
- 50 Elution Tubes, 0.5ml
- 25ml Nuclease-Free Water

PRODUCT	SIZE	CAT.#
<b>Maxwell® RSC simplyRNA Blood Kit Multi-Pack</b>	<b>144 preps</b>	<b>ASB1380</b>

For Research Use. Not for use in diagnostic procedures. Each Multi-Pack contains sufficient reagents for 144 automated isolations. Cartridges are single-use only. **Note:** ASB1380 is not recommended for use with the Maxprep™ Liquid Handler. Includes:

- 12 × 100ml Cell Lysis Solution
- 3 × 30ml Homogenization Solution
- 3 × 20ml Lysis Buffer
- 6 × 1ml Proteinase K
- 3 × 900µl 1-Thioglycerol
- 6 vials DNase I (lyophilized)
- 3 × 50µl Blue Dye
- 144 Maxwell® RSC Cartridges
- 3 × 50/pkg RSC/CSC Plungers
- 3 × 50 Elution Tubes, 0.5ml
- 3 × 25ml Nuclease-Free Water

**Storage Conditions:** Upon receipt, remove the 1-Thioglycerol and store at +2°C to +10°C. Store the remaining kit components at room temperature (+15°C to +30°C). 1-Thioglycerol also can be stored at room temperature (+15°C to +30°C), where it is stable for up to 9 months.

**Safety Information:** The Maxwell® RSC Cartridges contain ethanol, which is flammable and an irritant. 1-Thioglycerol is toxic. Guanidine thiocyanate and guanidine hydrochloride (which are components of the Homogenization Solution and Lysis Buffer) are toxic, harmful and irritants. Wear gloves and follow standard safety procedures while working with these substances. Refer to the SDS for detailed safety information.



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



**Caution:** Handle cartridges with care; seal edges may be sharp. Bleach reacts with guanidine thiocyanate and should not be added to any sample waste from these cartridges.

## 2. Product Components and Storage Conditions (continued)

### For Manual Preprocessing

PRODUCT	SIZE	CAT.#
Cell Lysis Solution	1L	A7933

### 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
Maxwell® RSC Plunger Pack	48/pack	AS1670
Maxprep™ Plunger Holder	1 each	AS9408
Maxprep™ 3-Position Reagent Tube Holder	1 each	AS9409

## 3. Sample Preparation



The Maxwell® RSC simplyRNA Blood Kit can process 2.5ml of fresh whole blood per RNA isolation.

### 3.A. Preparation of Solutions

#### Mixture of 1-Thioglycerol and Homogenization Solution

A volume of 200µl of 1-Thioglycerol/Homogenization Solution mixture is needed for each sample. To prepare a working solution, add 20µl of 1-Thioglycerol per milliliter of Homogenization Solution. 1-Thioglycerol is viscous, so careful pipetting is required for accurate measurement. Alternatively, add 600µl of 1-Thioglycerol to the 30ml bottle of Homogenization Solution. Before use, chill the mixture of 1-Thioglycerol and Homogenization Solution on ice or at +2°C to +10°C.

**Note:** Store the mixture of 1-Thioglycerol and Homogenization Solution at +2°C to +10°C, where it is stable for up to 30 days.

#### DNase I Solution

Add 275µl of Nuclease-Free Water to the vial of lyophilized DNase I. Invert to rinse DNase off the underside of the cap, and swirl gently to mix; do not vortex. Add 5µl of Blue Dye to the reconstituted DNase I as a visual aid for pipetting. Dispense the DNase I Solution into single-use aliquots in 1.5ml nuclease-free tubes (such as ClickFit Microtubes, Cat.# V4741). Each purification requires 10µl of DNase I solution. Store reconstituted DNase I at –30°C to –10°C. DNase I solution maintains activity for up to 10 freeze-thaw cycles.

### 3.B Preparing White Blood Cell Pellets

#### Materials to Be Supplied By the User

- fresh (not frozen) whole blood in EDTA collection tubes
- benchtop vortex mixer
- 14ml tubes and caps (sterile; e.g., Corning Cat.# 352006)
- centrifuge with swinging-bucket rotor
- RNase-free, sterile, aerosol-resistant pipette tips



**Note:** The Maxwell<sup>®</sup> RSC simplyRNA Blood Kit contains two reagents with the word lysis in their name: **Cell Lysis Solution** (Part# A793A, 100ml) and **Lysis Buffer** (Part# MC501C, 20ml). Please check that you use the correct reagent at each step.

1. Transfer 2.5ml of well mixed fresh (not frozen) whole blood from the EDTA collection tube into a sterile 14ml tube.
2. Add 7.5ml of Cell Lysis Solution (Part# A793A), and invert the tube 5–6 times to mix. This is a differential lysis step; the red blood cells are lysed, leaving the white blood cells intact.
3. Incubate lysates for 10 minutes at room temperature. Twice during the incubation, invert to mix.
4. Centrifuge tube at  $3,000 \times g$  for 10 minutes.
5. Remove and discard as much of the supernatant as possible without disturbing the visible white pellet. Briefly spin to collect residual liquid at the bottom of the tube, and remove and discard the supernatant with a pipette.
6. Add 200 $\mu$ l of chilled 1-Thioglycerol/Homogenization Solution mixture to the pellet. Mix well with a pipette or vortex or both to ensure complete resuspension of the pellet.

### 4. Manual Preprocessing

#### Materials to Be Supplied By the User

- benchtop vortex mixer
- RNase-free, sterile, aerosol-resistant pipette tips

#### 4.A. Preprocessing of Lysed White Blood Cell Pellets

1. Add 200 $\mu$ l of Lysis Buffer (Part# MC501C) and 25 $\mu$ l of Proteinase K to the resuspended white blood cell pellet. Mix by vortexing for 20 seconds.
2. Incubate at room temperature for 10 minutes. During this time, prepare cartridges as described in Section 4.B.
3. Add 10 $\mu$ l of blue DNase I Solution (prepared as described in Section 3.A) to well #4 of the Maxwell<sup>®</sup> RSC simplyRNA Blood Cartridge (well #4 contains yellow reagent). After the blue DNase I Solution is added, the reagent in well #4 will be green.
4. Add lysate to well #1 (the largest well) of the Maxwell<sup>®</sup> simplyRNA Blood Cartridge.
5. Proceed to Section 6, Maxwell<sup>®</sup> Instrument Setup and Run.

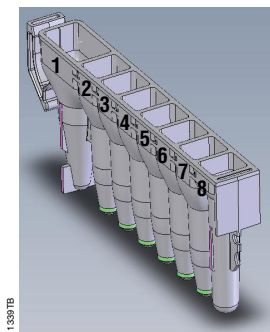
#### 4.B. Maxwell® RSC simplyRNA Blood Cartridge Preparation

Cartridges should be prepared shortly before adding the lysate at Step 4 in Section 4.A.

1. To maintain an RNase-free environment during processing, 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 has been 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.
4. Add 50µl of Nuclease-Free Water to the bottom of each elution tube.

##### Notes:

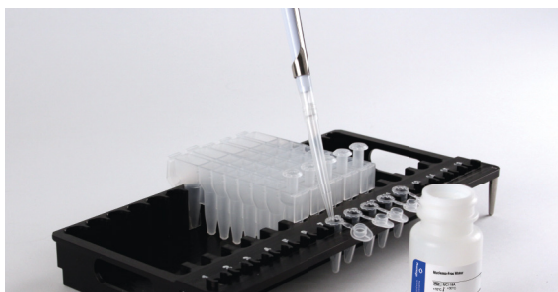
1. Specimen or reagent spills on any part of the deck tray should be cleaned with a detergent-water solution, followed by a bacteriocidal spray or wipe, and then water. Do not use bleach on any instrument parts.
2. Use only the 0.5ml Elution Tubes provided in the kit; other tubes may be incompatible with the Maxwell® Instrument.



##### User Adds to Wells

1. Preprocessed samples
4. DNase I Solution
8. RSC Plunger

**Figure 1. Maxwell® RSC Cartridge.**



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

## 5. Maxprep™ Preprocessing

### 5.A. Maxprep™ Cartridge Preparation

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 simplyRNA Blood preprocessing method or laboratory-specific variant of the simplyRNA Blood preprocessing method.
  - b. Use a bar code reader to scan the 2D bar code on the kit box to automatically select the appropriate base method. Touch the laboratory-specific variant of the simplyRNA Blood 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. Enter any method-specific variables (Sample Number, Elution Volume).
6. Before 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® 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. 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.



### 5.A. Maxprep™ Cartridge Preparation (continued)

7. 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:

#### Labware Type

- Maxprep™ Plunger Holders with Maxwell® RSC Plunger Packs (2; one may be partially full)
- Maxwell® RSC 48 Front deck tray or Maxwell® RSC deck tray containing Maxwell® RSC cartridges with seals removed and open elution tubes
- Maxwell® RSC 48 Back deck tray or Maxwell® RSC deck tray containing Maxwell® RSC cartridges with seals removed and open elution tubes (depending on sample number)
- Maxprep™ 3-Position Reagent Tube Holder with up to 3 tubes containing Proteinase K
- Maxprep™ 3-Position Reagent Tube Holder with up to 3 tubes containing DNase I Solution
- Maxprep™ Reagent Reservoir, 50ml with Lysis Buffer
- Maxprep™ Reagent Reservoir, 50ml with Nuclease-Free Water
- tube carriers loaded with tubes containing white blood cell lysates. All tubes within a carrier must be of the same type.  
**Note:** Do not place 15ml conical tubes on the instrument; tips will crash into the tubes.
- Maxprep™ 1000µl Conductive Disposable Tips, Filtered (2; one may be partially full)
- Maxprep™ 300µl Conductive Disposable Tips, Filtered (racks may be partial or full)

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

### 5.B. Maxprep™ Liquid Handler Preprocessing Protocol

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

1. The system prepares a lysis reaction consisting of the following components:
  - a. white blood cell lysate in 14ml tube
  - b. 25µl of Proteinase K Solution
  - c. 200µl of Lysis Buffer
2. The Lysate incubates for 10 minutes.
3. During the lysis incubation, 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), and 10µl of DNase I Solution is transferred to well# 4 of each of the cartridges in the Maxwell® RSC or Maxwell® RSC 48 deck tray(s).
4. After lysis incubation is complete, each sample is transferred from the 14ml tube to its corresponding Maxwell® RSC cartridge.

5. Method is complete. Open the instrument door and move the deck tray(s) to the Maxwell® RSC or Maxwell® RSC 48 Instrument for extraction. Remove primary sample tubes, processing plate, and 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.

## 6. Maxwell® Instrument Setup and Run

Refer to the *Maxwell® RSC Instrument Operating Manual #TM411* or *Maxwell® RSC 48 Instrument Operating Manual #TM510* for more 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 extraction 'Methods' screen. When running in Portal mode, scan the bar code(s) 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 tray(s), select a method using one of the two options below:
  - a. Touch the simplyRNA Blood 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 simplyRNA Blood method has been selected, and touch the **Proceed** button. If requested by the software, enter any kit lot and expiration information that has been required by the Administrator.
5. On the 'Cartridge Setup' screen (if shown), touch the cartridge positions to select or 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, use the **Front** and **Back** buttons to select and deselect cartridge positions on each deck tray.

## 6. Maxwell® Instrument Setup and Run (continued)

- 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 Nuclease-Free Water 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(s):** 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.

- 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 trays 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:

- Touching the **Abort** button will abandon the run. All samples from an aborted run will be lost.
- If a 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, perform Clean Up when requested. If plungers are not present on the plunger bar, you can choose to skip Clean Up. The samples will be lost.
- Follow the on-screen instructions at the end of the method to open the door. Verify that the plungers are located in well #8 of the cartridge at the end of the run. If the 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 unload the plungers.
- Remove the deck tray(s) from the instrument. Remove elution tubes containing RNA, and cap the tubes. After the run has been completed, 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.



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

## 7. Storing Eluted RNA

If sample eluates are not processed immediately, the eluted RNA should be stored at  $-20^{\circ}\text{C}$  or  $-70^{\circ}\text{C}$  for up to 24 hours in the Maxwell<sup>®</sup> Elution Tubes. If longer term storage is desired, transfer the eluted RNA into RNase-free labware that is suitable for long-term storage and store at  $-70^{\circ}\text{C}$  or below. Consult the instructions for downstream applications for specific sample storage and handling recommendations.

## 8. Troubleshooting

For questions not addressed here, please contact your local Promega Branch Office or Distributor. Contact information available at: [www.promega.com](http://www.promega.com). E-mail: [techserv@promega.com](mailto:techserv@promega.com)

### Symptoms

Low RNA yield, RNA degradation or poor reproducibility between samples

### Causes and Comments

Sample contains a low amount of RNA. The amount of RNA present in a sample depends on the metabolic state and white blood cell count.

The blood sample was too old. Best yields are obtained with fresh blood. Samples that have been stored at  $2-10^{\circ}\text{C}$  for more than 3 days may give reduced yields. Stability of individual messages may vary.

Use fresh blood; do not freeze blood. For best results, do not freeze the cell pellet. However, the cell pellet resuspended in 1-Thioglycerol/Homogenization Solution mixture may be frozen.

The wrong method was run with the Maxwell<sup>®</sup> Instrument.

Lysis Buffer was added to whole blood instead of Cell Lysis Solution. Both red and white blood cells are lysed by Lysis Buffer, so there would be little or no pellet.

1-Thioglycerol was not added to the Homogenization Solution.

Lysis Buffer was not added or was added in the wrong order.

Lysates were not mixed sufficiently. Lysates must be mixed by vortexing for 20 seconds.

## 8. Troubleshooting (continued)

<b>Symptoms</b>	<b>Causes and Comments</b>
Low RNA yield, RNA degradation or poor reproducibility between samples (continued)	RNase was introduced by handling. Use sterile, disposable plasticware or baked glassware when handling RNA. Wear clean gloves at all times. RNases introduced during or after purification will degrade the RNA. See Section 9.A, Creating a Ribonuclease-Free Environment.
Too many red blood cells in the pellet	All or part of the pellet was lost during removal of the supernatant. Avoid loss of the pellet. Centrifuge for additional time if needed.
Cell pellet in 1-Thioglycerol/Homogenization Solution mixture is too viscous to pipet	The cell pellet may be resuspended a second time with 2ml of Cell Lysis Solution (extra not provided) and centrifuged again at $3,000 \times g$ for 10 minutes. Cell Lysis Solution may be purchased separately (Cat.# A7933).
Sample foams during vortexing	Reduce the viscosity by adding an additional 100 $\mu$ l of 1-Thioglycerol/Homogenization Solution mixture. Vortex or pipet to mix. Add a total of 300 $\mu$ l of Lysis Buffer and add up to 400 $\mu$ l of lysate to the cartridge.
Instrument unable to pick up plungers	Sample will settle during the proteinase K incubation. All liquid and foam can be added to the cartridge.
Instrument unable to pick up plungers	Make sure you are using an RSC-specific chemistry kit; the Plungers for the Maxwell <sup>®</sup> RSC reagent kits are specific for the Maxwell <sup>®</sup> RSC and Maxwell <sup>®</sup> RSC 48 Instruments.

## 9. Appendix

### 9.A. Creating a Ribonuclease-Free Environment

Ribonucleases (RNases) are extremely difficult to inactivate. Take care to avoid introducing RNase activity into your RNA samples during and after isolation. This is especially important if the starting material was difficult to obtain or is irreplaceable. The following notes may help prevent accidental RNase contamination of your samples.

1. Two of the most common sources of RNase contamination are the user's hands and bacteria or molds that may be present on airborne dust particles. To prevent contamination from these sources, use sterile technique when handling the reagents supplied with this system. Wear gloves at all times. Change gloves whenever ribonucleases may have been contacted.
2. Whenever possible, sterile, disposable plasticware should be used for handling RNA. These materials generally are RNase-free and do not require pretreatment to inactivate RNase.
3. Treat nonsterile glassware, plasticware and electrophoresis chambers before use to ensure that they are RNase-free. Bake glassware at 200°C overnight, and thoroughly rinse plasticware with 0.1N NaOH, 1mM EDTA, followed by RNase-free water. Commercially available RNase removal products also may be used, following the manufacturer's instructions.

**Note:** Electrophoresis chambers may be contaminated with ribonucleases, particularly RNase A, from analysis of DNA samples. Whenever possible, set aside a new or decontaminated apparatus for RNA analysis only.

4. Treat solutions not supplied with the system by adding diethyl pyrocarbonate (DEPC) to 0.1% in a fume hood. Incubate overnight with stirring at room temperature in the hood. Autoclave for 30 minutes to remove any trace of DEPC.

**Caution:** DEPC is a suspected carcinogen and should only be used in a chemical fume hood. DEPC reacts rapidly with amines and cannot be used to treat Tris buffers.



**Note:** For all downstream applications, it is essential that you continue to protect your RNA samples from RNases. Continue to wear clean gloves and use solutions and centrifuge tubes that are RNase-free.



## 9.B. 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/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
2.0ml Deep Well Plates (Non-Sterile)	60/pack	AS9309
2.0ml Deep Well Plates (Sterile)	60/pack	AS9307
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
ClickFit Microtube, 1.5ml	1,000/pack	V4741

### Maxwell® RSC Reagent Kits

For a list of available Maxwell® RSC purification kits, visit: [www.promega.com](http://www.promega.com).

## **10. Summary of Changes**

The following changes were made to the 4/22 revision of this document:

1. Updated Sections 7 and 9.B.
2. Edited text in Section 3.A.
3. Incorporated other general text updates.

<sup>(a)</sup>U.S. Pat. No. 6,855,499, European Pat. Nos. 1368629, 2090655 and 2363476, Japanese Pat. No. 4399164 and other patents.

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Nunc is a trademark of Nalge Nunc International. 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.