

September 2015

artus[®] HCV QS-RGQ Kit Handbook



72 (catalog no. 4518356)

Version 1

IVD

Quantitative in vitro diagnostics

For use with QIASymphony[®] SP/AS and Rotor-Gene[®] Q Instruments

REF

4518356



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Intended Use

The *artus* HCV QS-RGQ Kit is an in vitro nucleic acid amplification test for the quantitation of hepatitis C virus (HCV) RNA in human EDTA plasma. This diagnostic test kit utilizes the reverse transcription–polymerase chain reaction (RT-PCR) and is configured for use with the QIA Symphony SP/AS and Rotor-Gene Q instruments.

The *artus* HCV QS RGQ Kit is intended for use in conjunction with clinical presentation and other laboratory markers for disease prognosis and for use as an aid in assessing viral response to antiviral treatment as measured by changes in human EDTA plasma HCV RNA levels. The *artus* HCV QS-RGQ Kit is not intended to be used as a screening test for HCV or as a diagnostic test to confirm the presence of HCV infection.



Check availability of new electronic labeling revisions at www.qiagen.com/artus-HCV-QS-RGQ-eL before test execution.

All kits can be used with the respective instruction elements as long as the version number of the handbook and other labeling information matches with the kit version number. The version number is visible on each kit box label. QIAGEN ensures compatibility between all test kit lots under the same version number.

Summary and Explanation

The *artus* HCV QS-RGQ Kit constitutes a ready-to-use system for the detection of HCV RNA using PCR on the Rotor-Gene Q with sample preparation and assay setup using the QIA Symphony SP/AS. The Hep. C Virus RG Master A and Hep. C Virus RG Master B contain reagents and enzymes for the specific amplification of a 240 bp region of the HCV genome, and for the direct detection of the specific amplicon in fluorescence channel Cycling Green of the Rotor-Gene Q.

In addition, the *artus* HCV QS-RGQ Kit contains a second heterologous amplification system to identify possible PCR inhibition. This is detected as an internal control (IC) in fluorescence channel Cycling Orange of the Rotor-Gene Q. The detection limit of the analytical HCV PCR is not reduced. Quantification standards (Hep. C Virus RG QS 1–4) are supplied, which allow the determination of the amount of viral RNA. For further information, see the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL.

Pathogen information

Hepatitis C is a liver inflammation caused by the virus of the same name. As opposed to the other hepatitis viruses A, B, D, or E, infection with the hepatitis C virus (HCV) leads, in a high number of cases, to chronic liver disease. An infection with HCV often produces no symptoms for a relatively long period of time. For this reason, most patients are not aware of their HCV infection. However, therapy is most effective in the earliest stages of the disease. Currently, interferon α (in combination with Ribavirin) is the only proven, effective treatment. However, it is also known that only some chronic hepatitis C patients respond to interferon therapy. Hence, under certain circumstances, this expensive patient treatment can be unfavorable and may have serious side effects such as a debilitation of the immune system, leading to exacerbations (e.g., lip herpes, shingles) (1–4).

Materials Provided

Kit contents

artus HCV QS-RGQ Kit		(72)
Catalog no.		4518356
Number of reactions		72
Blue	Hep. C Virus RG* Master A	8 x 144 µl
Violet	Hep. C Virus RG Master B	8 x 216 µl
Red	Hep. C Virus RG QS [†] 1 (10 ⁴ IU/µl)	QS 200 µl
Red	Hep. C Virus RG QS 2 (10 ³ IU/µl)	QS 200 µl
Red	Hep. C Virus RG QS 3 (10 ² IU/µl)	QS 200 µl
Red	Hep. C Virus RG QS 4 (10 ¹ IU/µl)	QS 200 µl
Green	Hep. C Virus RG IC [‡]	IC 2 x 1000 µl
White	Water (PCR grade)	1000 µl
	Leaflet	1

* Rotor-Gene.

† Quantitation standard.

‡ Internal control.

Materials Required but Not Provided

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, consult the appropriate safety data sheets (SDSs), available from the product supplier.

- Pipets (adjustable)* and sterile pipet tips with filters
- Vortex mixer*
- Benchtop centrifuge* with rotor for 2 ml reaction tubes, capable of centrifugation at 6800 x *g*

For sample preparation

- QIA Symphony SP instrument* (cat. no. 9001297)
- QIA Symphony AS instrument* (cat. no. 9001301)

For PCR

- Rotor-Gene Q*
- Rotor-Gene Q Software version 2.3 or higher*

Note: Additional information about materials required for specific applications is contained in the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL.

Warnings and Precautions

For in vitro diagnostic use

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate safety data sheets (SDSs). These are available online in convenient and compact PDF format at www.qiagen.com/safety where you can find, view, and print the SDS for each QIAGEN® kit and kit component.

For safety information for the purification kit used, refer to the relevant kit handbook. For safety information regarding instruments, refer to the applicable instrument user manual.

Discard sample and assay waste according to your local safety regulations.

* Make sure that instruments have been checked and calibrated according to the manufacturer's recommendations.

General precautions

Always pay attention to the following:

- Use sterile pipet tips with filters.
- During manual steps, keep tubes closed when possible and avoid contamination.
- Thaw all components thoroughly at room temperature (15–25°C) before starting an assay.
- When thawed, mix the components (by pipetting repeatedly up and down or by pulse vortexing) and centrifuge briefly. Make sure that no foam or bubbles are present in the reagent tubes.
- Do not mix components from kits with different lot numbers.
- Make sure that the required adapters are precooled to 2–8°C.
- Work quickly and keep PCR reagents on ice or in the cooling block before loading.
- Proceed continuously from one part of the workflow to the next. Do not exceed 30 minutes of transfer time between the QIA Symphony AS to the Rotor-Gene Q.

Reagent Storage and Handling

The components of the *artus* HCV QS-RGQ Kit should be stored at –30°C to –15°C and are stable until the expiration date stated on the label. Repeated thawing and freezing (>2 x) should be avoided, as this may reduce assay performance.

Specimen Handling and Storage

Information about specimen handling and storage for specific applications is contained in the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL.

Procedure

Getting started on the QIA Symphony SP/AS

Close all drawers and the hoods.

Switch on the QIA Symphony SP/AS, and wait until the “Sample Preparation” screen appears and the initialization procedure has finished.

Log in to the instrument (drawers will unlock).

Viral RNA purification

The *artus* HCV QS-RGQ Kit has been validated with a viral RNA purification step performed on the QIA Symphony SP using a QIA Symphony DSP Virus/Pathogen Kit. Refer to the *QIA Symphony DSP Virus/Pathogen Handbook* for all the information on how to prepare the Reagent Cartridge (RC) for the sample purification step on the QIA Symphony SP.

Using an internal control and Carrier RNA (CARRIER)

Using QIA Symphony DSP Virus/Pathogen Kits in combination with the *artus* HCV QS-RGQ Kit requires introduction of the internal control (Hep. C Virus RG IC) into the purification procedure to monitor the efficiency of sample preparation and downstream assay. In addition, QIA Symphony DSP Virus/Pathogen Kits may require the preparation of Carrier RNA (CARRIER). For specific information regarding the internal control and the use of Carrier RNA (CARRIER), see the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL.

Assay Control Sets and Assay Parameter Sets

Assay Control Sets are the combination of a protocol plus additional parameters, such as internal control, for sample purification on the QIA Symphony SP. A default Assay Control Set is preinstalled for each protocol.

Assay Parameter Sets are the combination of an assay definition with additional parameters defined, such as replicate count and number of assay standards, for assay setup on the QIA Symphony AS.

For integrated runs on the QIA Symphony SP/AS, the Assay Parameter Set is directly linked to an upfront Assay Control Set specifying the associated sample purification process.

Yields of nucleic acids

Eluates prepared with Carrier RNA (CARRIER) may contain much more Carrier RNA (CARRIER) than target nucleic acids. We recommend using quantitative amplification methods to determine yields.

Storing nucleic acids

For short-term storage of up to 24 hours, we recommend storing purified nucleic acids at 2–8°C. For long-term storage of over 24 hours, we recommend storage at –20°C.

RNA isolation and assay setup on the QIA Symphony SP/AS

The following description is a general protocol for using QIA Symphony DSP Virus/Pathogen Kits. Detailed information for a specific application, including volumes and tubes, is provided in the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL.

Important points before starting

- Make sure that you are familiar with operating the QIA Symphony SP/AS. Refer to the most current versions of the applicable user manuals online at www.qiagen.com/artus-HCV-QS-RGQ-eL.
- Before using a Reagent Cartridge (RC) for the first time, check that Buffers QSL2 and QSB1 in the Reagent Cartridge (RC) do not contain a precipitate. If necessary, remove the troughs containing Buffers QSL2 and QSB1 from the Reagent Cartridge (RC) and incubate for 30 minutes at 37°C with occasional shaking to dissolve precipitate. Make sure to replace the troughs in the correct positions. If the Reagent Cartridge (RC) is already pierced, make sure that the troughs are sealed with Reuse Seal Strips (RSS) and incubate the complete Reagent Cartridge (RC) for 30 minutes at 37°C with occasional shaking in a water bath.
- Try to avoid vigorous shaking of the Reagent Cartridge (RC) otherwise foam may be generated, which can lead to liquid-level detection problems.
- Work quickly and keep PCR reagents on ice or in the cooling block before loading.
- The reagent volumes are optimized for 72 reactions per kit per run (cat. no. 4518356).
- Before each use, all reagents need to be thawed completely, mixed (by repeated up and down pipetting or by quick vortexing), and centrifuged for at least 3 seconds at 6800 x g. Avoid foaming of the reagents.
- Eluates from the sample preparation and all components of the *artus* HCV QS-RGQ Kit have been shown to be stable onboard the instrument for at least the normal time required for sample purification for 96 samples and assay setup of 72 assays, including up to 30 minutes transfer time from the QIA Symphony AS to the Rotor-Gene Q.

Things to do before starting

- Prepare all required mixtures. If needed, prepare mixtures containing Carrier RNA (CARRIER) and internal controls just before starting. For more information, see the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL.
- Before starting the procedure, make sure that the magnetic particles are fully resuspended. Vortex the trough containing the magnetic particles vigorously for at least 3 minutes before first use.
- Before loading the Reagent Cartridge (RC), remove the cover from the trough containing the magnetic particles and open the enzyme tubes. Make sure that the enzyme rack has been equilibrated to room temperature (15–25°C).
- Make sure that the Piercing Lid (PL) is placed on the Reagent Cartridge (RC) and the lid of the magnetic-particle trough has been removed or, if using a partially used Reagent Cartridge (RC), make sure the Reuse Seal Strips (RSS) have been removed.
- If samples are bar coded, orient samples in the tube carrier so that the bar codes face the bar code reader within the “Sample” drawer at the left side of the QIA Symphony SP.

Viral RNA purification on the QIA Symphony SP

1. **Close all drawers and the hoods of the QIA Symphony SP/AS.**
2. **Switch on the instrument, and wait until the “Sample Preparation” screen appears and the initialization procedure has finished.**
The power switch is located at the bottom, left corner of the QIA Symphony SP.
3. **Log in to the instrument.**
4. **Prepare the following drawers according to the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL.**
 - “Waste” drawer; when prepared, perform an inventory scan
 - “Eluate” drawer; when prepared, perform an inventory scan
 - “Reagents and Consumables” drawer; when prepared, perform an inventory scan
 - “Sample” drawer

5. **Using the “Integrated run” setup on the QIA Symphony touchscreen, enter the required information for each batch of samples to be processed. Select an Assay Parameter Set for the run and assign it and the corresponding AS batch to the samples.**

Information about the Assay Parameter Set and preselected elution volume is provided on the relevant Application Sheet.

For more information about integrated runs on the QIA Symphony SP/AS, see the instrument user manuals.

6. **When setting up an integrated run, check for correct assignment of sample labware, sample type (sample, EC+, and EC-), and volumes.**

Information about consumables and components to load in each drawer is provided on the relevant Application Sheet.

7. **After information about all batches of the integrated run has been entered, click the “OK” button to exit the “Integrated run” setup. The status of all batches within the overview of the integrated run changes from “LOADED” to “QUEUED”. As soon as one batch is queued the “Run” button appears. Press the “Run” button to start the procedure.**

All processing steps are fully automated.

Loading the QIA Symphony AS drawers for assay setup

1. **Immediately after starting the integrated run, open the QIA Symphony AS drawers. The required components to be loaded are shown on the touchscreen.**
2. **Always make sure to do the following before the integrated run.**
 - Insert the tip chute
 - Discard the tip disposal bag
 - Install an empty tip disposal bag
3. **Define and load assay rack(s). Assay rack(s), in precooled adapter(s), are loaded onto the “Assay” slot(s). Information about the assay racks is provided on the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL.**
4. **Check the temperature of the cooling positions.**

When the target cooling temperatures are reached, the small asterisk next to each slot will appear green.

5. **Combine all tubes of HCV RG Master A in a single kit into one tube before use. Combine all tubes of HCV RG Master B in a single kit into one tube before use.**

Note: Viscous reagents can be difficult to handle with manual pipets. Make sure to transfer the entire volume of the Master in the tube.

6. **Fill each reagent tube with the required volume of appropriate reagent according to the loading information given by the instrument software.**

Note: Before each use, all reagents need to be thawed completely, mixed (by repeated up and down pipetting or by quick vortexing), and centrifuged for at least 3 seconds at 6800 x g. Avoid bubbles or foaming, which could cause detection errors. Work quickly and keep PCR components on ice or in the cooling block before loading.

7. **Load the reagent rack and place the reagent tubes, without lids, into the appropriate positions of precooled adapters for reagents according to the relevant Application Sheet.**

8. **Load disposable filter-tips into the "Eluate and Reagents" and "Assays" drawers according to the required number of each tip type indicated on the relevant Application Sheet.**

9. **Close the "Eluate and Reagents" and "Assays" drawers.**

Load tip racks starting with tip slots 1, 2, and 3 in the "Eluate and Reagents" drawer, and then load tip racks into tip slots 7, 8, and 9 in the "Assays" drawer.

Recommendation: Load more than the required amount of filter-tips of each size so that sufficient filter-tips are available for automated error handling.

10. **Upon closing each drawer, press "Scan" to start the inventory scan for each drawer.**

The inventory scan checks the slots, adapters, filter-tips, and the tip chute, as well as the correct loading of specific reagent volumes. If required, correct any errors.

The assay setup will start automatically after the purification step on the QIASymphony SP is completed and the eluate racks are transferred to the QIASymphony AS.

11. **After the run is finished, press "Remove" in the assay setup "Overview" screen. Open the "Assays" drawer and unload the assay rack(s).**

12. **Download the result and cyclor files.**

13. **If multiple batches on the QIASymphony AS are configured in an integrated run, reload the QIASymphony AS drawers, starting at step 8.**

14. Proceed to “RT-PCR on the Rotor-Gene Q”, page 16.

15. Perform the regular maintenance of the QIA Symphony AS during the PCR run on the Rotor-Gene Q or later.

Since the workflow is an integrated operation, clean all instruments at the end of the completed workflow.

Follow the maintenance instructions in the applicable user manual. Make sure to carry out maintenance regularly to minimize the risk of cross-contamination.

RT-PCR on the Rotor-Gene Q

To make sure data generated will be analogous to the performance characteristics of the *artus* HCV QS-RGQ Kit, use the following parameters to analyze all data generated using the *artus* HCV QS-RGQ Kit.

Analysis settings for PCR analysis

Channel	Target	Threshold	Dynamic tube	Slope correct	Take-Off Adjustment*
Cycling Green	HCV	0.05	On	Off	15/35
Cycling Orange	IC [†]	0.03	On	On	15/35

* Take-Off Adjustment requires RG software version 2.3 or higher.

[†] IC: Internal Control.

For additional instructions on setting the threshold, refer to the applicable Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL.

Important points before starting

- Take time to familiarize yourself with the Rotor-Gene Q before starting the protocol. Refer to the applicable user manual.
- Make sure that at all 4 quantitation standards as well as at least one negative control (Water, PCR grade) are included per PCR run. To generate a standard curve, use all 4 quantitation standards supplied (Hep. C Virus RG QS 1–4) for each PCR run.

1. Close the PCR tubes, and place them in the 72-Well Rotor of the Rotor-Gene Q.

Important: Make sure to transfer the strip tubes in the correct orientation, so that the position indices of the cooling adapter and the rotor match.

Make sure that the locking ring (accessory of the Rotor-Gene Q) is placed on top of the rotor to prevent accidental opening of the tubes during the run.

2. Transfer the cycler file from the QIASymphony AS to the Rotor-Gene Q computer.

3. For the detection of HCV RNA, create a temperature profile and start the run according to the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL. Software-specific information about programming the Rotor-Gene Q is provided in the relevant Protocol Sheet "Settings to run *artus* QS-RGQ Kits" at www.qiagen.com/artus-HCV-QS-RGQ-eL.

Interpretation of Results

See the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-el for detailed information about interpretation of results.

Conversion factor

One IU/ml corresponds to 1.21 copies/ml for detection of HCV RNA on the Rotor-Gene Q. This was established by a regression analysis of multiple dilution series compared against a reference method reporting in copies/ml.

Troubleshooting guide

This troubleshooting guide may be helpful in solving any problems that may arise. The scientists in QIAGEN Technical Services are always happy to answer any questions you may have about either the information and protocols in this handbook or sample and assay technologies (for contact information, see back cover or visit www.qiagen.com).

Comments and suggestions

General handling

Error message displayed in the touchscreen	If an error message is displayed during a protocol run, refer to the user manuals supplied with your instruments.
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Precipitate in reagent trough of opened Reagent Cartridge (RC) of the QIASymphony DSP Virus/Pathogen Kit

a) Buffer evaporation	Excessive evaporation may lead to increased salt concentration or decreased alcohol concentrations in buffers. Discard the Reagent Cartridge (RC). Make sure to seal buffer troughs of a partially used Reagent Cartridge (RC) with Reuse Seal Strips (RSS) when not being used for purification.
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Comments and suggestions

- b) Storage of Reagent Cartridge (RC) Storage of Reagent Cartridge (RC) under 15°C may lead to formation of precipitates. If necessary, remove the troughs containing Buffers QSL2 and QSB1 from the Reagent Cartridge (RC) and incubate in a water bath at 37°C for 30 minutes with occasional shaking to dissolve precipitate. Make sure to replace the troughs in the correct positions. If the Reagent Cartridge (RC) is already pierced, make sure that the troughs are reclosed with Reuse Seal Strips (RSS) and incubate the complete Reagent Cartridge (RC) in a water bath at 37°C for 30 minutes with occasional shaking.

Low yield of nucleic acids

- a) Magnetic particles were not completely resuspended Before starting the procedure, make sure that the magnetic particles are fully resuspended. Vortex for at least 3 minutes before use.
- b) Frozen samples were not mixed properly after thawing Thaw frozen samples with mild agitation to make sure re thorough mixing.
- c) Carrier RNA (CARRIER) not added Reconstitute Carrier RNA (CARRIER) in Buffer AVE (AVE) and mix with appropriate volume of Buffer AVE (AVE) as described in the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL. Repeat the purification procedure with new samples.
- d) Degraded nucleic acids Samples were stored incorrectly or subjected to too many freeze–thaw cycles. Repeat the purification procedure with new samples.

Comments and suggestions

- e) Incomplete sample lysis Before use, check that Buffer QSL2 and QSB1 do not contain precipitates. If necessary, remove the troughs containing Buffers QSL1 and QSB1 from the Reagent Cartridge (RC) and incubate for 30 minutes at 37°C with occasional shaking to dissolve precipitate. If the Reagent Cartridge (RC) is already pierced, make sure that the troughs are reclosed with Reuse Seal Strips (RSS), and incubate the complete Reagent Cartridge (RC) for 30 minutes at 37°C with occasional shaking in a water bath.
- f) Clogging of pipet tip due to insoluble material Insoluble material was not removed from the sample prior to starting the QIASymphony purification procedure. To remove insoluble material for viral applications, centrifuge the sample at 3000 x g for 1 minute, and transfer the supernatant to a new sample tube.

QIASymphony AS detects insufficient Master

Not all of the Master transferred to tube

Combine all tubes of HCV RG Master A into one tube before use. Combine all tubes of HCV RG Master B in a single kit into one tube before use. Viscous reagents can be difficult to handle with manual pipets. Make sure to transfer the entire volume of the Master in the tube.

For viscous reagents, we recommend aspirating an extra volume of 5% when using manual pipets (e.g., adjust the pipet to 840 µl for an 800 µl volume).

Alternatively, after slowly dispensing the liquid and performing a blowout at the target tube's wall, remove the tip from the liquid, release the pipet plunger, and wait for an additional 10 seconds. Residual liquid will flow down the tip and can be blown out by pressing the pipet plunger a second time. The use of PCR grade filter-tips labeled as "low retention" can improve the recovery of liquid.

Comments and suggestions

No signal with quantitation standards (Hep. C Virus RG QS 1–4) in fluorescence channel Cycling Green

- | | |
|--|--|
| a) The selected fluorescence channel for PCR data analysis does not comply with the protocol | For data analysis select the fluorescence channel Cycling Green for the analytical HCV PCR and the fluorescence channel Cycling Orange for the internal control PCR. |
| b) Incorrect programming of the temperature profile of the Rotor-Gene Q | Compare the temperature profile with the protocol. See the relevant Application Sheet and Protocol Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL . |
| c) Incorrect configuration of the PCR | Make sure that assay setup was performed correctly and that the correct Assay Parameter Set was used. Repeat the PCR, if necessary. See the relevant Application Sheet at www.qiagen.com/artus-HCV-QS-RGQ-eL . |
| d) The storage conditions for one or more kit components did not comply with the instructions given in “Reagent Storage and Handling” (page 8) | Check the storage conditions and the expiration date (see the kit label) of the reagents and use a new kit, if necessary. |
| e) The <i>artus</i> HCV QS-RGQ Kit has expired | Check the storage conditions and the expiration date (see the kit label) of the reagents and use a new kit, if necessary. |

Weak or no signal of the internal control of a negative plasma sample subjected to purification using the QIASymphony DSP Virus/Pathogen Kit in fluorescence channel Cycling Orange and simultaneous absence of a signal in channel Cycling Green

- | | |
|---|--|
| a) The PCR conditions do not comply with the protocol | Check the PCR conditions (see above) and repeat the PCR with corrected settings, if necessary. |
|---|--|

Comments and suggestions

- b) The PCR was inhibited Make sure that you use the validated isolation method (see "RNA isolation and assay setup on the QIAasymphony SP/AS", page 11) and closely follow the instructions.
- c) RNA was lost during extraction An absent signal of the internal control can indicate the loss of RNA during the extraction. Make sure that you use the validated isolation method (see "RNA isolation and assay setup on the QIAasymphony SP/AS", page 11) and closely follow the instructions.
See also "Low yield of nucleic acids", above.
- d) The storage conditions for one or more kit components did not comply with the instructions given in "Reagent Storage and Handling" (page 8) Check the storage conditions and the expiration date (see the kit label) of the reagents and use a new kit, if necessary.
- e) The *artus* HCV QS-RGQ Kit has expired Check the storage conditions and the expiration date (see the kit label) of the reagents and use a new kit, if necessary.

Signals with the negative controls in fluorescence channel Cycling Green of the analytical PCR

- a) Contamination occurred during preparation of the PCR Repeat the PCR with new reagents in replicates.
If possible, close the PCR tubes directly after addition of the sample to be tested.
Make sure that work space and instruments are decontaminated at regular intervals.
- b) Contamination occurred during extraction Repeat the extraction and PCR of the sample to be tested using new reagents.
Make sure that work space and instruments are decontaminated at regular intervals.

Quality Control

In accordance with QIAGEN's ISO-certified Quality Management System, each lot of *artus* HCV QS-RGQ Kit is tested against predetermined specifications to ensure consistent product quality.

Limitations

- For in vitro diagnostic use.
- The product is to be used by personnel specially instructed and trained in the in vitro diagnostics procedures only.
- Strict compliance with the applicable user manuals is required for optimal PCR results.
- Attention should be paid to expiration dates printed on the box and labels of all components. Do not use expired components.
- Although rare, mutations within the highly conserved regions of the viral genome covered by the kit's primers and/or probe may result in underquantitation or failure to detect the presence of the virus in these cases. Validity and performance of the assay design are evaluated at regular intervals.

Performance Characteristics

See www.qiagen.com/artus-HCV-QS-RGQ-eL for performance characteristics of the *artus* HCV QS-RGQ Kit.

References

1. Mauss, S., Berg, T., Rockstroh, J., Sarrazin, C., and Wedemeyer, H., eds. (2012) *The Flying Publisher Short Guide to Hepatitis C*. 2012 ed. No location: Flying Publisher.
2. Mauss, S., Berg, T., Rockstroh, J., Sarrazin, C., and Wedemeyer, H., eds. (2012) *Hepatitis: A Clinical Textbook*. 2012 ed. No location: Flying Publisher.
3. Munir, S. et al. (2010) Hepatitis C treatment: current and future perspectives. *Virology* **7**, 296.
4. Harrington, P.R., Zeng, W., and Naeger, L.K. (2012) Clinical relevance of detectable but not quantifiable hepatitis C virus RNA during boceprevir or telaprevir treatment. *Hepatology* **55**, 1048.

Symbols

Symbol	Description
	Contains reagents sufficient for <N>reactions
	Use by
	In vitro diagnostic medical device
	Catalog number
	Lot number
	Material number
	Components
	Contains
	Number
	Global Trade Item Number
	Temperature limitation
	Manufacturer
	Consult instructions for use
	Caution

Contact Information

For technical assistance and more information, please see our Technical Support Center at www.qiagen.com/Support, call 0800557779, or contact one of the QIAGEN Technical Service Departments or local distributors (see back cover or visit www.qiagen.com).

Ordering Information

Product	Contents	Cat. no.
<i>artus</i> HCV QS-RGQ Kit (72)	For 72 reactions: 2 Masters, 4 Quantitation Standards, Internal Control, Water (PCR grade)	4518356
QIASymphony RGQ system		
QIASymphony RGQ, System	QIASymphony SP, QIASymphony AS, Rotor-Gene Q 5plex HRM; includes required accessories and consumables, installation, and training; includes 1-year warranty on parts and labor	9001850
QIASymphony SP	QIASymphony sample prep module: includes 1-year warranty on parts and labor	9001297
QIASymphony AS	QIASymphony assay setup module: includes 1-year warranty on parts and labor	9001301
Rotor-Gene Q 5plex HRM	Real-time PCR cycler and High Resolution Melt analyzer with 5 channels (green, yellow, orange, red, crimson) plus HRM channel, laptop computer, software, accessories	9001580

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

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The purchase of this product allows the purchaser to use it for the performance of diagnostic services for human in vitro diagnostics. No general patent or other license of any kind other than this specific right of use from purchase is granted hereby.

Trademarks: QIAGEN®, QIASymphony®, *artus*®, Rotor-Gene® (QIAGEN Group).

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