November 4, 2022

Roche Molecular Systems, Inc.
Ashley Malich
Manager Regulatory Affairs
4300 Hacienda Drive
Pleasanton, California 94588-2722

Re: K221007
Trade/Device Name: cobas HCV
Regulation Number: 21 CFR 866.3170
Regulation Name: Nucleic Acid-Based Hepatitis C Virus Ribonucleic Acid Tests
Regulatory Class: Class II
Product Code: MZP
Dated: April 4, 2022
Received: April 5, 2022

Dear Ashley Malich:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. Although this letter refers to your product as a device, please be aware that some cleared products may instead be combination products. The 510(k) Premarket Notification Database located at https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm identifies combination product submissions. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part

801 and Part 809); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803) for devices or postmarketing safety reporting (21 CFR 4, Subpart B) for combination products (see https://www.fda.gov/combination-products/guidance-regulatory-information/postmarketing-safety-reporting-combination-products); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820) for devices or current good manufacturing practices (21 CFR 4, Subpart A) for combination products; and, if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to https://www.fda.gov/medical-devices/medical-device-safety/medical-device-reporting-mdr-how-report-medical-device-problems.

For comprehensive regulatory information about medical devices and radiation-emitting products, including information about labeling regulations, please see Device Advice (https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance) and CDRH Learn (https://www.fda.gov/training-and-continuing-education/cdrh-learn). Additionally, you may contact the Division of Industry and Consumer Education (DICE) to ask a question about a specific regulatory topic. See the DICE website (https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance/contact-us-division-industry-and-consumer-education-dice) for more information or contact DICE by email (DICE@fda.hhs.gov) or phone (1-800-638-2041 or 301-796-7100).

Sincerely,

Maria I. Garcia -S

Maria Garcia, Ph.D.
Assistant Director
Division of Microbiology Devices
OHT7: Office of In Vitro Diagnostics
Office of Product Evaluation and Quality
Center for Devices and Radiological Health

Enclosure

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Food and Drug Administration

# Indications for Use

Form Approved: OMB No. 0910-0120
Expiration Date: 06/30/2023
*See PRA Statement below.*

510(k) Number *(if known)*
K221007

Device Name
cobas® HCV

Indications for Use *(Describe)*
cobas® HCV is an in vitro nucleic acid amplification test for both the detection and quantitation of hepatitis C virus (HCV) RNA, in human EDTA plasma or serum, of HCV antibody positive or HCV-infected individuals. Specimens containing HCV genotypes 1 to 6 are validated for detection and quantitation in the assay.
cobas® HCV is intended for use as an aid in the diagnosis of HCV infection in the following populations: individuals with antibody evidence of HCV with evidence of liver disease, individuals suspected to be actively infected with HCV antibody evidence, and individuals at risk for HCV infection with antibodies to HCV. Detection of HCV RNA indicates that the virus is replicating and therefore is evidence of active infection.
cobas® HCV is intended for use as an aid in the management of HCV-infected patients undergoing anti-viral therapy. The assay can be used to measure HCV RNA levels at baseline, during treatment, at the end of treatment, and at the end of follow up of treatment to determine sustained or non-sustained viral response. The results must be interpreted within the context of all relevant clinical and laboratory findings.
cobas® HCV has not been approved for use as a screening test for the presence of HCV in blood or blood products.
Assay performance characteristics have been established for individuals treated with certain direct-acting antiviral agents (DAA) regimens. No information is available on the assay's predictive value when other DAA combination therapies are used.

Type of Use *(Select one or both, as applicable)*

☒ Prescription Use (Part 21 CFR 801 Subpart D) ☐ Over-The-Counter Use (21 CFR 801 Subpart C)

**CONTINUE ON A SEPARATE PAGE IF NEEDED.**

This section applies only to requirements of the Paperwork Reduction Act of 1995.

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# **cobas**® HCV for use on the **cobas**® 5800/6800/8800 Systems
# 510(k) Summary

This summary of 510(k) safety and effectiveness information is being submitted in accordance with the requirements of 21 CFR 807.92.

| | |
|---|---|
| **Submitter Name** | Roche Molecular Systems, Inc. |
| **Address** | 4300 Hacienda Drive<br>Pleasanton, CA 94588-2722 |
| **Contact** | Ashley Malich<br>Phone: (925) 368-0881<br>FAX: (925) 225-0207<br>Email: ashley.malich@roche.com |
| **Date Prepared** | March 25, 2022 |
| **Proprietary Name** | **cobas**® HCV for use on the **cobas**® 5800/6800/8800 Systems |
| **Common Name** | **cobas**® HCV |
| **Classification Name** | ASSAY, HYBRIDIZATION AND/OR NUCLEIC ACID AMPLIFICATION FOR DETECTION OF HEPATITIS C RNA, HEPATITIS C VIRUS |
| **Product Codes** | MZP, 21 CFR 866.3170 |
| **Predicate Devices** | **cobas**® HCV for use on the **cobas**® 6800/8800 Systems (P150015) |
| **Establishment Registration** | Roche Molecular Systems, Inc. (2243471) |

## 1. DEVICE DESCRIPTION

**cobas**® HCV is a quantitative test performed on the **cobas**® 5800 System, **cobas**® 6800 System and **cobas**® 8800 System. **cobas**® HCV enables the detection and quantitation of HCV RNA in EDTA plasma or serum of infected patients. Dual probes are used to detect and quantify, but not discriminate genotypes 1–6. The viral load is quantified against a non-HCV armored RNA quantitation standard (RNA-QS), which is introduced into each specimen during sample preparation. The RNA-QS also functions as an internal control to assess substantial failures during the sample preparation and PCR amplification processes. In addition, the test utilizes three external controls: a high titer positive, a low titer positive, and a negative control.

## 1.1. Principles of the Procedure

**cobas**® HCV is based on fully automated sample preparation (nucleic acid extraction and purification) followed by PCR amplification and detection. The **cobas**® 5800 System is designed as one integrated instrument. The **cobas**® 6800/8800 Systems consist of the sample supply module, the transfer module, the processing module, and the analytic module. Automated data management is performed by the **cobas**® 5800 System or **cobas**® 6800/8800 Systems software(s) which assigns test results for all tests as target not detected, < LLoQ (lower limit of quantitation), > ULoQ (upper limit of quantitation) or HCV RNA detected, a value in the linear range LLoQ ≤ $x$ ≤ ULoQ. Results can be reviewed directly on the system screen, exported, or printed as a report.

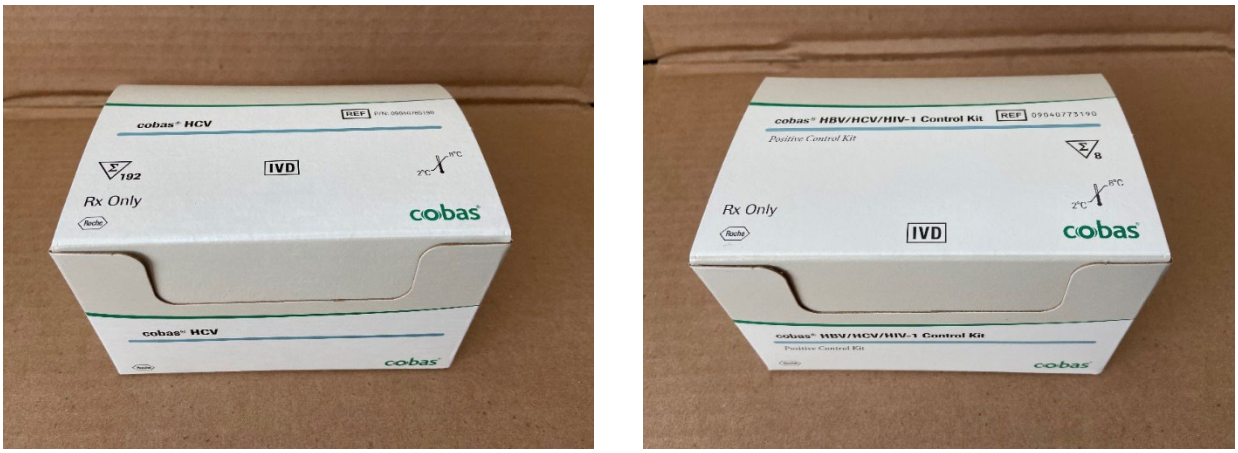
Nucleic acid from patient samples, external controls and added armored RNA-QS molecules are simultaneously extracted by addition of proteinase and lysis reagent to the sample. The released nucleic acid binds to the silica surface of the added magnetic glass particles. Unbound substances and impurities, such as denatured protein, cellular debris and potential PCR inhibitors are removed with subsequent wash buffer steps and purified nucleic acid is eluted from the magnetic glass particles with elution buffer at elevated temperature.

Selective amplification of target nucleic acid from the patient sample is achieved by the use of target virus-specific forward and reverse primers which are selected from highly conserved regions of HCV. Selective amplification of RNA-QS is achieved by the use of sequence-specific forward and reverse primers which are selected to have no homology with the HCV genome. A thermostable DNA polymerase enzyme is used for both reverse-transcription and PCR amplification. The target and RNA-QS sequences are amplified simultaneously utilizing a universal PCR amplification profile with predefined temperature steps and number of cycles. The master mix includes deoxyuridine triphosphate (dUTP), instead of deoxythimidine triphosphate (dTTP), which is incorporated into the newly synthesized DNA (amplicon).[1-3] Any contaminating amplicon from previous PCR runs are eliminated by the AmpErase enzyme, which is included in the PCR mix, during the first thermal cycling step. However, newly formed amplicon are not eliminated since the AmpErase enzyme is inactivated once exposed to temperatures above 55°C.

The **cobas**® HCV master mix contains dual detection probes specific for the HCV target sequences and one for the RNA-QS. The probes are labeled with target-specific fluorescent reporter dyes allowing simultaneous detection of HCV target and RNA-QS in two different

target channels.[4,5] When not bound to the target sequence, the fluorescent signal of the intact probe is suppressed by a quencher dye. During the PCR amplification step, hybridization of the probes to the specific single-stranded DNA template results in cleavage of the probe by the 5'-to-3' nuclease activity of the DNA polymerase resulting in separation of the reporter and quencher dyes and the generation of a fluorescent signal. With each PCR cycle, increasing amounts of cleaved probes are generated and the cumulative signal of the reporter dye increases concomitantly. Real-time detection and discrimination of PCR products is accomplished by measuring the fluorescence of the released reporter dyes for the viral targets and RNA-QS.

**Figure 1: cobas® HCV for use on the cobas® 5800 System and cobas® 6800/8800 Systems**




## 2. INDICATIONS FOR USE

**cobas®** HCV is an in vitro nucleic acid amplification test for both the detection and quantitation of hepatitis C virus (HCV) RNA, in human EDTA plasma or serum, of HCV antibody positive or HCV-infected individuals. Specimens containing HCV genotypes 1 to 6 are validated for detection and quantitation in the assay.

**cobas®** HCV is intended for use as an aid in the diagnosis of HCV infection in the following populations: individuals with antibody evidence of HCV with evidence of liver disease, individuals suspected to be actively infected with HCV antibody evidence, and individuals at risk for HCV infection with antibodies to HCV. Detection of HCV RNA indicates that the virus is replicating and therefore is evidence of active infection.

**cobas®** HCV is intended for use as an aid in the management of HCV-infected patients undergoing anti-viral therapy. The assay can be used to measure HCV RNA levels at baseline,

during treatment, at the end of treatment, and at the end of follow up of treatment to determine sustained or non-sustained viral response. The results must be interpreted within the context of all relevant clinical and laboratory findings.

**cobas**® HCV has not been approved for use as a screening test for the presence of HCV in blood or blood products.

Assay performance characteristics have been established for individuals treated with certain direct-acting antiviral agents (DAA) regimens. No information is available on the assay's predictive value when other DAA combination therapies are used.

## 3. TECHNOLOGICAL CHARACTERISTICS

The primary technological characteristics and intended use of the RMS **cobas**® HCV for use on the **cobas**® 5800 System is substantially equivalent to other legally marketed nucleic acid amplification test intended for the quantitative detection of hepatitis C virus.

As indicated in Table 1 **cobas**® HCV for use on the **cobas**® 5800 System, is substantially equivalent to significant characteristics of the identified predicate device, **cobas**® HCV for use on the **cobas**® 6800/8800 Systems (P150015).

**Table 1: Comparison of the cobas® HCV for use on the cobas® 5800 System, and Predicate device cobas® HCV for use on the cobas® 6800/8800 Systems**

| | **Submitted Device: cobas® HCV for use on the cobas® 5800 System** | **Predicate Device: cobas® HCV for use on the cobas® 6800/8800 System (P150015)** |
|---|---|---|
| Regulation Number | 21 CFR 866.3170 | same |
| Regulation Name | ASSAY, HYBRIDIZATION AND/OR NUCLEIC ACID AMPLIFICATION FOR DETECTION OF HEPATITIS C RNA, HEPATITIS C VIRUS | same |
| Product Code | MZP | same |

| | **Submitted Device:**<br>**cobas® HCV for use on the cobas® 5800 System** | **Predicate Device:**<br>**cobas® HCV for use on the cobas® 6800/8800 System (P150015)** |
|---|---|---|
| Intended Use | **cobas®** HCV is an in vitro nucleic acid amplification test for both the detection and quantitation of hepatitis C virus (HCV) RNA, in human EDTA plasma or serum, of HCV antibody positive or HCV-infected individuals. Specimens containing HCV genotypes 1 to 6 are validated for detection and quantitation in the assay.<br>**cobas®** HCV is intended for use as an aid in the diagnosis of HCV infection in the following populations: individuals with antibody evidence of HCV with evidence of liver disease, individuals suspected to be actively infected with HCV antibody evidence, and individuals at risk for HCV infection with antibodies to HCV. Detection of HCV RNA indicates that the virus is replicating and therefore is evidence of active infection.<br>**cobas®** HCV is intended for use as an aid in the management of HCV-infected patients undergoing anti-viral therapy. The assay can be used to measure HCV RNA levels at baseline, during treatment, at the end of treatment, and at the end of follow up of treatment to determine sustained or non-sustained viral response. The results must be interpreted within the context of all relevant clinical and laboratory findings.<br>**cobas®** HCV has not been approved for use as a screening test for the presence of HCV in blood or blood products.<br>Assay performance characteristics have been established for individuals treated with certain direct-acting antiviral agents (DAA) regimens. No information is available on the assay's predictive value when other DAA combination therapies are used. | same |
| Conditions for Use | For Prescription Use | same |
| Sample Types | Human EDTA Plasma, Serum | same |
| Analyte Targets | Hepatitis C RNA genotypes 1 to 6 | same |
| Sample Preparation Procedure | Automated | same |
| Amplification Technology | Real Time PCR | same |

| | Submitted Device:<br>cobas® HCV for use on the cobas® 5800 System | Predicate Device:<br>cobas® HCV for use on the cobas® 6800/8800 System (P150015) |
|---|---|---|
| Detection Chemistry | Dual detection probes labeled with target-specific fluorescent reporter dyes allowing simultaneous detection of HCV target and RNA-QS in two different target channels. Real time detection and discrimination of PCR products is accomplished by measuring the fluorescence of the released reporter dyes. | same |
| Controls Used | RNA-QS functions as an internal control.<br>Three external controls: High Titer Positive, Low Titer Positive, Negative Control | same |
| Results Analysis | PCR cycle threshold analysis | same |

# 4. ASSAY PERFORMANCE

## 4.1. System Equivalency / System Comparison

System equivalency of the **cobas**® 5800, **cobas**® 6800 and **cobas**® 8800 Systems was demonstrated via performance studies. The term Technical Equivalency Verification (TEV) studies is used to described these system equivalency studies.

To transfer the commercially available **cobas**® HCV assay from the **cobas**® 6800/8800 System to the **cobas**® 5800 System, an assay migration approach has been pursued following the FDA guidance for "Assay Migration Studies for In Vitro Diagnostic Devices" (FDA-2008-N-0642). Therefore, only a selection of performance studies for **cobas**® HCV has been executed to prove equivalence of the two platforms. A summary of these studies is included in Table 2 and the sections below.

The results presented in the Instructions for Use support equivalent performance for all systems.

**Table 2: Performance Summary of the cobas® HCV assay on the cobas® 6800/8800 System and the cobas® 5800 System**

| Performance Characteristic | cobas® 5800 System | cobas® 6800/8800 System |
|---|---|---|
| Limit of Detection (LoD) – EDTA Plasma | Confirmed Equivalent | 8.5 IU/mL |
| Limit of Detection (LoD) – Serum | Confirmed Equivalent | 9.6 IU/mL |
| Linearity – EDTA Plasma and Serum | Confirmed Equivalent | 15 IU/mL to 1.00E+08 IU/mL |
| Reproducibility (Precision)* | Confirmed Equivalent | |
| Cross-Contamination | Confirmed Equivalent | 0.42% cross-contamination rate |

| Performance Characteristic | cobas® 5800 System | cobas® 6800/8800 System |
|---|---|---|
| Method Comparison** | Confirmed Equivalent | |
| **cobas®** HCV Open Kit stability | 90 days (40 runs) | 90 days (40 runs) |
| **cobas®** HCV On-Board stability | 36 days | 40 hours |
| **cobas®** HBV/HCV/HIV-1 Control Kit On-Board Stability | 36 days | 8 hours |

**See Section 4.2 for more information on Reproducibility.*

***See Section 4.3 for more information on Method Comparison.*

## 4.2. Reproducibility (Precision)

Reproducibility was assessed for HCV with a panel ranging from 1.50E+01 IU/mL to 1.00E+08 IU/mL. A dilution series consisting of clinical specimen and plasmid RNA sample was used to generate the Reproducibility (Precision) panel. HCV positive material was serially diluted in plasma to create a panel of 7 members that includes concentration levels at, below, and above medical decision points. The testing of 3 replicates was performed over 5 days, using 3 **cobas®** 5800 instruments at 3 different sites (1 internal and 2 external) and 3 **cobas®** 6800/8800 instruments at 1 internal site, 2 runs per day per instrument and by using overall three different lots of the **cobas®** HCV kits. The results for **cobas®** HCV on the **cobas®** 5800 and **cobas®** 6800/8800 Systems are displayed in Table 3.

**Table 3: Standard Deviation and Coefficient of Variance (%) for cobas® HCV on cobas® 5800 and cobas® 6800/8800. Three Systems at three Sites combined (Absolute and Percentage)**

| Platform | Panel Member | Standard Deviation (SD) and Percent Coefficient of Variation (CV) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean observed log10 Titer (IU/mL) | N | Site | | Day | | Run | | Within-Run | | Total | |
| | | | | SD | CV [%] | SD | CV [%] | SD | CV [%] | SD | CV [%] | SD | CV [%] |
| cobas 5800 | PM1 | 7.80 | 90 | 0.18 | 2.31 | 0.08 | 1.00 | 0.02 | 0.26 | 0.05 | 0.66 | 0.20 | 2.61 |
| | PM2 | 6.65 | 90 | 0.14 | 2.17 | 0.07 | 1.03 | 0.01 | 0.12 | 0.04 | 0.67 | 0.17 | 2.50 |
| | PM3 | 5.79 | 90 | 0.15 | 2.65 | 0.06 | 1.11 | 0.00 | 0.00 | 0.06 | 1.04 | 0.18 | 3.05 |
| | PM4 | 4.07 | 90 | 0.11 | 2.65 | 0.07 | 1.77 | 0.04 | 1.07 | 0.06 | 1.54 | 0.15 | 3.70 |
| | PM5 | 2.01 | 90 | 0.15 | 7.68 | 0.00 | 0.00 | 0.04 | 1.96 | 0.16 | 8.17 | 0.23 | 11.38 |
| | PM6 | 1.50 | 89 | 0.09 | 5.70 | 0.00 | 0.00 | 0.05 | 3.65 | 0.23 | 15.14 | 0.25 | 16.59 |
| | PM7 | 1.28 | 90 | 0.16 | 12.20 | 0.09 | 6.94 | 0.00 | 0.36 | 0.27 | 21.37 | 0.33 | 25.57 |

| Platform | Panel Member | Standard Deviation (SD) and Percent Coefficient of Variation (CV) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean observed log10 Titer (IU/mL) | N | Site | | Day | | Run | | Within-Run | | Total | |
| | | | | SD | CV [%] | SD | CV [%] | SD | CV [%] | SD | CV [%] | SD | CV [%] |
| cobas 6800/ 8800 | PM1 | 7.99 | 90 | 0.00 | 0.00 | 0.04 | 0.50 | 0.01 | 0.07 | 0.04 | 0.49 | 0.06 | 0.71 |
| | PM2 | 6.78 | 90 | 0.01 | 0.09 | 0.03 | 0.39 | 0.02 | 0.27 | 0.04 | 0.65 | 0.05 | 0.81 |
| | PM3 | 5.93 | 89 | 0.01 | 0.24 | 0.04 | 0.59 | 0.02 | 0.35 | 0.03 | 0.58 | 0.06 | 0.93 |
| | PM4 | 4.12 | 90 | 0.00 | 0.00 | 0.02 | 0.41 | 0.00 | 0.00 | 0.06 | 1.51 | 0.06 | 1.57 |
| | PM5 | 2.14 | 90 | 0.01 | 0.64 | 0.07 | 3.26 | 0.00 | 0.00 | 0.12 | 5.66 | 0.14 | 6.56 |
| | PM6 | 1.58 | 90 | 0.00 | 0.00 | 0.05 | 3.20 | 0.00 | 0.00 | 0.24 | 15.21 | 0.25 | 15.55 |
| | PM7 | 1.26 | 88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 19.80 | 0.25 | 19.80 |

## 4.3. Method Comparison

A Method comparison study was performed using 150 archived or contrived, well-characterized HCV positive plasma specimens with titers ranging from 1.5E+01 to 1E+08 IU/mL to assess the assay performance equivalency. In addition, 30 HCV negative individual specimens were used. Each of the specimens was tested on the **cobas**® 5800 System at three different sites (1 internal and 2 external) and on a **cobas**® 6800/8800 System at one site (internal).

The Method Comparison study for **cobas**® HCV met all the clinical and statistical acceptance criteria with the exception of the statistical criterion for bias estimates at the 3 medical decision points. Although the bias estimates were statistically significant, the differences are not clinically significant given that the biases are well below the standard deviation observed in the Reproducibility Study of the **cobas**® HCV on the **cobas**® 6800/8800 Systems and both the upper and lower bound of the 95% CIs are close to zero. Therefore, the two systems are clinically equivalent at all medical decision points. It is important to note that for high precision molecular assays, small differences may be statistically significant but may not be clinically relevant.
A summary of the results can be found in Table 4.

**Table 4: Summary Method Comparison for HCV**

| Clinical Criteria | | | |
|---|---|---|---|
| **Acceptance Criteria** | **Achieved Results** | | **Met** |
| With all sites combined, 95% of differences in viral load measurement between the cobas® 5800 and cobas® 6800/8800 Systems for positive samples should be less than ±0.5 $\log_{10}$ (viral concentration). | With all sites combined, 100% of differences in viral load measurement between the cobas® 5800 and cobas® 6800/8800 Systems for positive samples were less than ±0.5 $\log_{10}$ (viral concentration). | | Yes |
| With all sites combined, 95% of negative sample results should agree between cobas® 5800 and cobas® 6800/8800 Systems. | With all sites combined, 100% of negative sample results agreed between cobas® 5800 and cobas® 6800/8800 Systems based on point estimate of NPA. | | Yes |
| **Statistical Criteria** | | | |
| With all sites combined, bias estimates should not be statistically significant, i.e. their confidence intervals should include zero. | Medical decision point (IU/mL) | Bias (95% CI) | |
| | 25 | -0.028 (-0.045, -0.012) | No |
| | 800,000 | 0.027 (0.022, 0.031) | No |
| | 6,000,000 | 0.037 (0.031, 0.044) | No |
| The lower bound of one sided 95% confidence intervals of the ATD zone percentages should be greater than 90%. | The lower bound of one sided 95% CI of the ATD zone percentage was 100% for all sites combined and 100% for each site. | | Yes |
| The lower bound of the two-sided 95% confidence interval of the NPA should be greater than 90% based on 90 valid test results with 30 negative samples tested at each of the 3 sites. | NPA =100% with lower bound of 95% CI as 96.667% for all sites combined. | | Yes |

## 5. CONCLUSIONS

The **cobas**® HCV for use on the **cobas**® 5800 System is the same as the device approved in PMA P150015. There have been no changes to the device to accommodate this claim expansion to include use on the **cobas**® 5800 System.

A comparison of the technological characteristics and conclusions drawn from nonclinical performance studies demonstrate that the device is substantially equivalent and performs as well as the legally marketed predicate device identified above.

## 6. REFERENCES


1. Longo MC, Berninger MS, Hartley JL. Use of uracil DNA glycosylase to control carry-over contamination in polymerase chain reactions. Gene. 1990;93:125-8. PMID: 2227421.

2. Savva R, McAuley-Hecht K, Brown T, Pearl L. The structural basis of specific base-excision repair by uracil-DNA glycosylase. Nature. 1995;373:487-93. PMID: 7845459.

3. Mol CD, Arvai AS, Slupphaug G, et al. Crystal structure and mutational analysis of human uracil-DNA glycosylase: structural basis for specificity and catalysis. Cell. 1995;80:869-78. PMID: 7697717.

4. Heid CA, Stevens J, Livak KJ, Williams PM. Real time quantitative PCR. Genome Res. 1996;6:986-94. PMID: 8908518.

5. Higuchi R, Dollinger G, Walsh PS, Griffith R. Simultaneous amplification and detection of specific DNA sequences. Biotechnology (N Y). 1992;10:413-7. PMID: 1368485.