Roche Molecular Systems, Inc.
Kaitlyn Hameister
Regulatory Affairs Specialist II
4300 Hacienda Drive
Pleasanton, CA 94588-2722

July 24, 2019

Re: K191729
Trade/Device Name: Cobas Influenza A/B Nucleic Acid Test for Use on the Cobas Liat System
Regulation Number: 21 CFR 866.3980
Regulation Name: Respiratory Viral Panel Multiplex Nucleic Acid Assay
Regulatory Class: Class II
Product Code: OCC, OOI
Dated: June 26, 2019
Received: June 27, 2019

Dear Kaitlyn Hameister:

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,

Tamara Feldblyum, Ph.D.
Chief
Division of Microbiology Devices
OHT7: Office of In Vitro Diagnostics
and Radiological Health
Office of Product Evaluation and Quality
Center for Devices and Radiological Health

Enclosure

cobas® Influenza A/B Nucleic acid test for use on the cobas® Liat® System 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 Pleasanton, CA 94588-2722
Contact	Kaitlyn Hameister Phone: (925) 730-8813 FAX: (925) 225-0207 Email: kaitlyn.hameister@roche.com
Date Prepared	May 1, 2018
Proprietary Name	cobas® Influenza A/B Nucleic acid test for use on the cobas® Liat® System
Common Name	Influenza A, B, Panel
Classification Name	Respiratory viral panel multiplex nucleic acid assay Real Time Nucleic Acid Amplification System
Product Codes	OCC, 21 CFR 866.3980 OOI, 21 CFR 862.2570
Predicate Devices	Liat™ Influenza A/B Assay (K111387 cleared 08/04/2011)
Establishment Registration	Roche Molecular Systems, Inc. Branchburg, NJ Establishment Number: 2243471 Roche Molecular Systems, Inc. Pleasanton, CA Establishment Number: 3004141078

1. DEVICE DESCRIPTION

The cobas® Influenza A/B assay is a rapid, automated *in vitro* diagnostic test for qualitative detection and differentiation of Influenza type A and type B viral RNA. The assay is performed on the cobas® Liat® System. The system automates and integrates sample purification, nucleic acid amplification, and detection of the target sequence in biological samples using real-time RT-PCR assays. The cobas® Liat® Analyzer consists of an instrument and preloaded software for running tests and viewing the results. The cobas® Liat® System consists of the analyzer and a single-use disposable cobas® Influenza A/B assay tube that holds the sample purification and RT-PCR reagents and hosts the sample preparation and RT-PCR processes. Other than adding

the sample to the cobas® Influenza A/B assay tube, no reagent preparation or additional steps are required. Because each cobas® Influenza A/B assay tube is self-contained, cross-contamination between samples is minimized. Turnaround time for a test is 20 minutes.

The cobas® Influenza A/B assay includes reagents for the detection and differentiation of Influenza A and B viral RNA in nasopharyngeal swab (NPS) specimens in universal transport media (UTM) from patients suspected of having Influenza. The assay targets a well-conserved region of the matrix gene of Influenza A viral RNA (Inf A target) and non-structural protein (NS) gene of Influenza B (Inf B target). An Internal Process Control (IPC) is also included. The IPC is present to control for adequate processing of the target viruses through all steps of the assay process and to monitor the presence of inhibitors in the RT-PCR reactions.

The cobas® Influenza A/B assay tube uses a flexible tube as a sample processing vessel. It contains all requisite PCR reagents pre-packed in assay tube segments separated by breakable seals. When a cobas® Influenza A/B assay tube containing a raw biological sample is inserted into the cobas® Liat® Analyzer, multiple sample processing actuators in the cobas® Liat Analyzer compress the cobas® Influenza A/B assay tube to selectively release the reagents, moving the sample from one segment to the next, and controlling reaction conditions. An embedded microprocessor controls and coordinates these actions to perform all required assay processes, including sample preparation, nucleic acid extraction, target concentration enrichment, inhibitor removal, nucleic acid elution, and real-time PCR. All assay steps are performed within the closed and self-contained cobas® Influenza A/B assay tube, minimizing cross-contamination between samples.

The detection module monitors the reaction in real-time, while an on-board computer analyzes the collected data and outputs an interpreted result. The latter is displayed in the assay report on the integrated LCD touch screen of the cobas® Liat® Analyzer and in an electronic file. The report can be printed directly through a USB or network-connected printer. The results can also be exported to an external server, middleware or data management system, or to a Laboratory Information System (LIS).

1.1. Test Workflow

Nasopharyngeal swab can be collected following the user institution’s standard procedures. For nasopharyngeal swab samples suspended in UTM, a user transfers 100 µL of the UTM sample into cobas® Influenza A/B assay tube.

A user then scans the assay tube barcode to identify the test and scans the sample barcode to code the sample ID using the cobas® Liat® System. The assay tube is then inserted into the cobas® Liat® Analyzer. The analyzer performs all test steps and outputs interpreted results in 20 minutes. A report of the interpreted results can be viewed in the View Results window, and printed directly through a USB connected printer.

Figure 1: Illustration of cobas® Liat® Analyzer Assay Testing Process

2. INTENDED USE

The cobas® Influenza A/B Nucleic acid test for use on the cobas® Liat® System (cobas® Influenza A/B) is an automated multiplex real-time RT-PCR assay for the rapid *in vitro* qualitative detection and discrimination of Influenza A virus and Influenza B virus RNA in nasopharyngeal swab specimens from patients with signs and symptoms of respiratory infection in conjunction with clinical and epidemiological risk factors. The test is intended for use as an aid in the differential diagnosis of Influenza A and Influenza B in humans and is not intended to detect Influenza C.

Negative results do not preclude Influenza virus infection and should not be used as the sole basis for treatment or other patient management decisions. Conversely, positive results do not rule out bacterial infection or co-infection with other viruses. The agent detected may not be the definite cause of disease.

Performance characteristics for Influenza A were established when Influenza A/H1 and A/H3 were the predominant Influenza A viruses in circulation. When other Influenza A viruses are emerging, performance characteristics may vary.

If infection with a novel Influenza A virus is suspected based on current clinical and epidemiological screening criteria recommended by public health authorities, specimens should be collected with appropriate infection control precautions for novel virulent Influenza viruses and sent to state or local health department for testing. Viral culture should not be attempted in these cases unless a BSL3+ facility is available to receive and culture specimens.

3. TECHNOLOGICAL CHARACTERISTICS

The technological characteristics and intended use of cobas® Influenza A/B for use on the cobas® Liat® System, when used with cobas® Influenza A/B assay script (FABA) v1.35, are substantially equivalent to the legally marketed device, which was originally cleared for use with FABA script v1.31. Table 1 provides a comparison of the modified device to the predicate device, as originally cleared through K111387.

Table 1: Comparison of the cobas® Influenza A/B Assay Script (FABA) v1.35 with the Predicate Device

Item Name	Submitted Device: cobas® Influenza A/B assay w/ FABA v1.35	Predicate Device: cobas® Influenza A/B assay w/ FABA v1.31
Intended Use	Same	The cobas® Influenza A/B Nucleic acid test for use on the cobas® Liat® System (cobas® Influenza A/B) is an automated multiplex real-time RT-PCR assay for the rapid *in vitro* qualitative detection and discrimination of Influenza A virus and Influenza B virus RNA in nasopharyngeal swab specimens from patients with signs and symptoms of respiratory infection in conjunction with clinical and epidemiological risk factors. The test is intended for use as an aid in the differential diagnosis of Influenza A and Influenza B in humans and is not intended to detect Influenza C. Negative results do not preclude Influenza virus infection and should not be used as the sole basis for treatment or other patient management decisions. Conversely, positive results do not rule out bacterial infection or co-infection with other viruses. The agent detected may not be the definite cause of disease. Performance characteristics for Influenza A were established when Influenza A/H1 and A/H3 were the predominant Influenza A viruses in circulation. When other Influenza A viruses are emerging, performance characteristics may vary. If infection with a novel Influenza A virus is suspected based on current clinical and epidemiological screening criteria recommended by public health authorities, specimens should be collected with appropriate infection control precautions for novel virulent Influenza viruses
Regulation	Same	21 CFR 866.3980

Item Name	Submitted Device: cobas® Influenza A/B assay w/ FABA v1.35	Predicate Device: cobas® Influenza A/B assay w/ FABA v1.31
Product Code	Same	OCC, OOI
Assay Target	Same	Influenza A, Influenza B
Sample Type	Same	Nasopharyngeal Swab
Influenza A Viral Target	Same	Well conserved region of the matrix gene
Influenza B Viral Target	Same	Well conserved region of the non-structural protein (NSP) gene
Assay Instrument	Same	cobas® Liat® Analyzer (Rebranded from Liat™ Analyzer)
Software	cobas® Liat® Analyzer Core Software v3.2 FABA v1.35	cobas® Liat® Analyzer Core Software v1.5.4 FABA v1.31
Self-contained System	Same	Yes, Integrated PC, software, and touch-screen display
All Assay Reagents Contained in Disposable	Same	Yes, no manual reagent addition required
Sample Volume Detection	Same	Yes, automatically checks that input sample volume exceeds lower limit
Automated Assay	Same	Yes, sample preparation, amplification and result interpretation
Error Diagnostic System	Same	Yes, monitors and records system parameters for error recover or abort if unrecoverable
Extraction Method	Same	Silica-magnetic bead-based nucleic acid extraction
Assay Method	Same	RT-PCR for detecting the presence/absence of viral RNA in clinical specimens
Detection Technique	Same	Multiplex assay using different reporter dyes for each target

Item Name	Submitted Device: cobas® Influenza A/B assay w/ FABA v1.35	Predicate Device: cobas® Influenza A/B assay w/ FABA v1.31
Result Interpretation	Same	Automated
PCR Curve Pattern Recognition	Same	Yes, ensures abnormal PCR curves are called “Invalid” or “Indeterminate”
Assay Result	Same	Qualitative
User	CLIA Waived (CW150003)	Hospital nurse and CLIA moderate complexity laboratory technologist
Test Availability	Same	Random access, on-demand test
Time-to-result	Same	~20 minutes

4. DESCRIPTION OF CHANGE: FABA SOFTWARE

cobas® Influenza A/B assay script (FABA) v1.35 incorporates the following changes:

- Updates to the Result Interpretation Concept logic and new checks and cut-offs implemented to address results erroneously reported as Invalid and prevent False Positives
- Bug fixes

5. DESIGN AND DEVELOPMENT ACTIVITY SUMMARY

Roche Molecular Diagnostics (RMD), Pleasanton, CA created and formally released the assay script component of the cobas® Liat® System software. The cobas® Liat® Analyzer core software was created and released by Roche Molecular Diagnostics in Rotkreuz, Switzerland. For information on the development of the cobas® Liat® Analyzer, details of development activities associated with FABA v1.35 have been included in this submission.

RMD in Pleasanton coordinated the development and verification of cobas® Influenza A/B assay script v1.35 at the Product Requirements, Technical Requirements and Technical Requirement Specifications (Unit Specifications) level. These activities included risk management, requirements management, configuration management, verification testing, and regression analysis.

6. ASSAY PERFORMANCE

Performance of the cobas® Influenza A/B assay with FABA v1.35 was evaluated using data from submissions (K111386, CW150003), internal studies, release testing, and the field. The result of this evaluation determined that the overall cobas® Influenza A/B assay performance and claims were not impacted by changes implemented in FABA v1.35, when compared to the current commercially available FABA script version.

7. CONCLUSION

Equivalent performance of the modified device and the current commercial device has been demonstrated, and analytical or clinical performance has not changed. The modified device is substantially equivalent to the predicate device, as originally cleared through K111386 and CLIA waived through CW150003.