InBios International, Inc.
Estela Raychaudhuri
President
307 Westlake Ave N, Suite 300
Seattle, Washington 98109

May 23, 2019

Re: DEN180069
Trade/Device Name: ZIKV *Detect* 2.0 IgM Capture ELISA
Regulation Number: 21 CFR 866.3935
Regulation Name: Zika Virus Serological Reagents
Regulatory Class: Class II
Product Code: QFO
Dated: December 20, 2018
Received: December 26, 2018

Dear Estela Raychaudhuri:

The Center for Devices and Radiological Health (CDRH) of the Food and Drug Administration (FDA) has completed its review of your De Novo request for classification of the ZIKV Detect 2.0 IgM Capture ELISA, a prescription device with the following indications for use:

> The ZIKV *Detect* 2.0 IgM Capture ELISA is intended for the qualitative detection of Zika virus IgM antibodies in human sera for the presumptive clinical laboratory diagnosis of Zika virus infection. The assay is intended for use only in patients with clinical signs and symptoms consistent with Zika virus infection, and/or CDC Zika virus epidemiological criteria (e.g., history of residence in or travel to a geographic region with active Zika transmission at the time of travel, or other epidemiological criteria for which Zika virus testing may be indicated). Assay results are for the presumptive detection of IgM antibodies to Zika virus (ZIKV). Positive results must be confirmed by following the latest CDC guidelines for the diagnosis of Zika virus infection.
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> Results of this test are intended to be used in conjunction with clinical observations, patient history, epidemiological information, and other laboratory evidence to make patient management decisions. Zika IgM levels are variable over the course of the infection, and may be detectable near day four post onset of symptoms and persist up to approximately 12 weeks following initial infection.
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> Negative results may be seen in specimens collected before day four post onset of symptoms or after the window of detectable IgM closes, and therefore do not preclude the possibility of Zika virus infection, past or present.

This assay is not indicated for testing blood or plasma donors.

Although this letter refers to your product as a device, please be aware that some granted products may instead be combination products. If you have questions on whether your product is a combination product, contact CDRHProductJurisdiction@fda.hhs.gov. FDA concludes that this device should be classified into Class II. This order, therefore, classifies the ZIKV Detect 2.0 IgM Capture ELISA, and substantially equivalent devices of this generic type, into Class II under the generic name Zika virus serological reagents.

FDA identifies this type of device as:

> Zika virus serological reagents are *in vitro* diagnostic devices that consist of antigens or antibodies for the detection of Zika virus or Zika antibodies in human specimens from individuals who have signs and symptoms consistent with Zika virus infection and/or epidemiological risk factors. The detection aids in the diagnosis of current or recent Zika virus infection or serological status. Negative results obtained with this test do not preclude the possibility of Zika virus infection, past or present. Positive results should be interpreted with consideration of other clinical information and laboratory findings and should not be used as the sole basis for treatment or other patient management decisions.

Section 513(f)(2) of the Food, Drug and Cosmetic Act (the FD&C Act) was amended by section 607 of the Food and Drug Administration Safety and Innovation Act (FDASIA) on July 9, 2012. This law provides two options for De Novo classification. First, any person who receives a "not substantially equivalent" (NSE) determination in response to a 510(k) for a device that has not been previously classified under the Act may request FDA to make a risk-based classification of the device under section 513(a)(1) of the Act. On December 13, 2016, the 21st Century Cures Act removed a requirement that a De Novo request be submitted within 30 days of receiving an NSE determination. Alternatively, any person who determines that there is no legally marketed device upon which to base a determination of substantial equivalence may request FDA to make a risk-based classification of the device under section 513(a)(1) of the Act without first submitting a 510(k). FDA shall, within 120 days of receiving such a request, classify the device. This classification shall be the initial classification of the device. Within 30 days after the issuance of an order classifying the device, FDA must publish a notice in the Federal Register announcing the classification.

On December 26, 2018, FDA received your De Novo requesting classification of the ZIKV Detect 2.0 IgM Capture ELISA. The request was submitted under section 513(f)(2) of the FD&C Act. In order to classify the ZIKV Detect 2.0 IgM Capture ELISA into class I or II, it is necessary that the proposed class have sufficient regulatory controls to provide reasonable assurance of the safety and effectiveness of the device for its intended use. After review of the information submitted in the De Novo request, FDA has determined that, for the previously stated indications for use, the ZIKV Detect 2.0 IgM Capture ELISA can be classified in class II with the establishment of special controls for class II. FDA believes that class II (special) controls provide reasonable assurance of the safety and effectiveness of the device type. The identified risks and mitigation measures associated with the device type are summarized in the following table:

Identified Risks to Health	Mitigation Measures
Risk of false results	Certain device description, performance characteristics, and study details in labeling Certain device description, validation procedures, and studies Certain device limitations in labeling
Failure to correctly interpret test results	Certain device description, performance characteristics, and study details in labeling Certain device limitations in labeling
Failure to correctly operate the device	Certain device description, performance characteristics, and study details in labeling Certain device description, validation procedures, and studies Certain device limitations in labeling

In combination with the general controls of the FD&C Act, the Zika virus serological reagents device is subject to the following special controls:

Special Controls

1. The labeling required under 21 CFR 809.10(b) must include:

(i) An intended use with a detailed description of what the device detects (Zika IgM antibodies, other Zika antibodies, or Zika antigens), the type of results provided to the user, the specimen type for which testing is indicated (e.g., serum, whole blood), the clinical indications appropriate for test use, and the specific population(s) for which the test is intended.

(ii) Performance characteristics from analytical and clinical studies required under paragraphs (b)(2)(ii) and (b)(2)(iii) of this section.

(iii) A detailed explanation of the interpretation of results and criteria for validity of results (e.g., criteria that internal or external quality controls must meet in order for a test/test run to be valid, minimum signal strength that the sample has to yield to be interpretable as a valid result).

(iv) Limiting statements indicating that:

a. Results are not intended to be used as the sole basis for diagnosis, treatment, or other patient management decisions. The test results should be interpreted in conjunction with clinical observations, patient history, epidemiological information, and other laboratory evidence.
b. Device results are intended to be followed up according to the latest professional guidelines (e.g., recommendations from the Centers for Disease Control and Prevention) for the diagnosis of Zika virus infection.
c. Negative test results do not preclude the possibility of Zika virus infection, past or present.
d. Specimens can result in false negative results on the device if collected outside of the appropriate response window for specific Zika virus

Special Controls

antigens or antibodies, as determined by scientific evidence (e.g., for IgM < 7 days post symptom onset (pso) or risk of exposure and if collected past 84 days pso).

(v) Detailed instructions for use that minimize the risk of generating a false positive or false negative result (e.g., co-testing of other matrices).

2. Design verification and validation must include:

(i) A detailed device description, including all device parts (e.g., Zika antigen target, other flavivirus antigen target, capture antibodies), instrument requirements, ancillary reagents required but not provided, and the technological characteristics, including all pre-analytical methods for specimen processing.

(ii) Detailed documentation and results from analytical performance studies including: characterization of the cut-off(s), analytical sensitivity to a standardized reference material that FDA has determined is appropriate (e.g., World Health Organization reference standard or the Centers for Disease Control and Prevention reference standard), class specificity for human antibodies (e.g., IgM or IgG), analytical specificity (cross reactivity including, but not limited to, cross reactivity to other flaviviruses), interference, carryover/cross contamination, specimen stability, hook effect (if applicable), matrix equivalency (if applicable), freeze-thaw studies (if applicable), and reproducibility.

(iii) Detailed documentation and results from clinical studies, including the clinical study protocol (with a description of the testing algorithm and results interpretation table), detailed clinical study report, including line data of the clinical study results, and other appropriate statistical analysis. The samples used in the clinical study must be collected from subjects representative of the full spectrum of the intended use population (e.g., endemic and non-endemic regions if both are indicated).

Section 510(m) of the FD&C Act provides that FDA may exempt a class II device from the premarket notification requirements under section 510(k) of the FD&C Act, if FDA determines that premarket notification is not necessary to provide reasonable assurance of the safety and effectiveness of the device type. FDA has determined premarket notification is necessary to provide reasonable assurance of the safety and effectiveness of the device type and, therefore, the device is not exempt from the premarket notification requirements of the FD&C Act. Thus, persons who intend to market this device type must submit a premarket notification containing information on the Zika virus serological reagents they intend to market prior to marketing the device.

Please be advised that FDA's decision to grant this De Novo request does not mean that FDA has made a determination that your device complies with other requirements of the FD&C Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the FD & C Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Parts 801 and 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/CombinationProducts/GuidanceRegulatoryInformation/ucm597488.htm); 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 FD & C Act); 21 CFR 1000-1050.

A notice announcing this classification order will be published in the Federal Register. A copy of this order and supporting documentation are on file in the Dockets Management Branch (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Room 1061, Rockville, MD 20852 and are available for inspection between 9 a.m. and 4 p.m., Monday through Friday.

As a result of this order, you may immediately market your device as described in the De Novo request, subject to the general control provisions of the FD&C Act and the special controls identified in this order.

For comprehensive regulatory information about medical devices and radiation-emitting products, please see Device Advice (https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/) and CDRH Learn (http://www.fda.gov/Training/CDRHLearn). 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 (http://www.fda.gov/DICE) for more information or contact DICE by email (DICE@fda.hhs.gov) or phone (1-800-638-2041 or 301-796-7100).

If you have any questions concerning the contents of the letter, please contact Beena Puri at 301-796-6202.

Sincerely,

Uwe Scherf -S

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