DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
10903 New Hampshire Avenue
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April 26, 2017

ROCHE DIAGNOSTICS
LISA KLINEDINST
REGULATORY AFFAIRS PRINCIPAL
9115 HAGUE ROAD
INDIANAPOLIS IN 46250

Re: K170938
Trade/Device Name: CalSet IGF-1
Regulation Number: 21 CFR 862.1150
Regulation Name: Calibrator
Regulatory Class: II
Product Code: JIT
Dated: March 29, 2017
Received: March 30, 2017

Dear Lisa Klinedinst:

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. 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 Parts 801 and 809); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the

electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

If you desire specific advice for your device on our labeling regulations (21 CFR Parts 801 and 809), please contact the Division of Industry and Consumer Education at its toll-free number (800) 638 2041 or (301) 796-7100 or at its Internet address http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm. 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 http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm for the CDRH's Office of Surveillance and Biometrics/Division of Postmarket Surveillance.

You may obtain other general information on your responsibilities under the Act from the Division of Industry and Consumer Education at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm.

Sincerely yours,

Kellie B. Kelm -S

for Courtney H. Lias,, Ph.D.
Director
Division of Chemistry and Toxicology Devices
Office of In Vitro Diagnostics
and Radiological Health
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: January 31, 2017
See PRA Statement below.

510(k) Number *(if known)*
k170938

Device Name
CalSet IGF-1

Indications for Use *(Describe)*
CalSet IGF-1 is used for calibrating the quantitative Elecsys IGF-1 assay on the Elecsys and cobas e immunoassay analyzers.

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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CalSet IGF-1: 510(k) Summary for k170938

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

In accordance with 21 CFR 807.87, Roche Diagnostics hereby submits official notification as required by Section 510(k) of the Federal Food, Drug and Cosmetics Act of our intention to market the devices described in this Premarket Notification 510(k).

The purpose of this Traditional 510(k) Premarket Notification is to obtain FDA review and clearance for CalSet IGF-1.

Submitter Name	Roche Diagnostics
Address	9115 Hague Road P.O. Box 50416 Indianapolis, IN 46250-0457
Contact	Lisa K. Klinedinst Phone: (317) 521-1942 FAX: (317) 521-2324 Email: lisa.klinedinst@roche.com
Date Prepared	April 26, 2017
510(k)	k170938
Proprietary Name	CalSet IGF-1
Common Name	CalSet IGF-1
Classification Name	Calibrator, Secondary
Product Codes, Regulation Numbers	JIT, 862.1150
Predicate Devices	CalSet Vitamin D total II (k162840)
Establishment Registration	The establishment registration numbers: Roche Diagnostics GmbH in Mannheim, Germany is 9610126, Roche Diagnostics Penzberg, Germany is 9610529 Roche Diagnostics in the United States is 1823260

1. DEVICE DESCRIPTION: CALSET IGF-1

CalSet IGF-1 is used for calibrating the quantitative Elecsys IGF-1 assay on the Elecsys and **cobas e** immunoassay analyzers. CalSet IGF-1 is a two concentration level set of lyophilized human serum matrix that is traceable to the WHO IS 02/254 Reference Material. The CalSet includes:

- IGF-1 Cal1: 2 bottles, each for 1.0 mL of calibrator 1
- IGF-1 Cal2: 2 bottles, each for 1.0 mL of calibrator 2

IGF-1 in two concentration ranges (approximately 20 ng/mL and approximately 500 ng/mL) in a human serum matrix.

2. INTENDED USE FOR CALSET IGF-1

CalSet IGF-1 is used for calibrating the quantitative Elecsys IGF-1 assay on the Elecsys and **cobas e** immunoassay analyzers.

3. TECHNOLOGICAL CHARACTERISTICS

The following table compares the CalSet IGF-1 with its predicate device.

Table 1: Calibrator Comparison

Feature	Predicate Device (CalSet Vitamin D total II)	Candidate Device
Intended Use/ Indications for Use	CalSet Vitamin D total II is used for calibrating the quantitative Elecsys Vitamin D total II assay on the **cobas e** 411 immunoassay analyzer.	CalSet IGF-1 is used for calibrating the quantitative Elecsys IGF-1 assay on the Elecsys and **cobas e** immunoassay analyzers.
Analyte	25-hydroxyvitamin D_3	IGF-1
Matrix	Human serum matrix with added 25-hydroxyvitamin D_3	Human serum matrix with added IGF-1
Levels	Two	Same
Target Ranges	Cal 1: approximately 2 ng/mL Cal 2: approximately 45 ng/mL	Cal 1: approximately 20 ng/mL Cal 2: approximately 500 ng/mL
Format	Lyophilized	Same
Handling	Carefully dissolve the contents of one bottle by adding exactly 1.0 mL of distilled or deionized water and allow to stand closed for 15 minutes to reconstitute. Mix carefully, avoiding the foam formation.	Same
Storage and Stability	Reconstituted calibrators: At 2-8°C – 72 hours At -20°C – 12 weeks (freeze only once) on the **cobas e** 411 analyzer at 20-25°C– up to 5 hours on MODULAR ANALYTICS E170, **cobas e** 601 and **cobas e** 602 analyzers at 20-25°C – use only once	Reconstituted calibrators: At 2-8°C – 72 hours At -20° ± 5°C – 31 days on the **cobas e** 411 analyzer at 20-25°C– up to 6 hours on MODULAR ANALYTICS E170, **cobas e** 601 and **cobas e** 602 analyzers at 20-25°C – use only once

Non-Clinical Performance Evaluation

Non-clinical performance evaluation for CalSet IGF-1 is briefly summarized below.

3.1. Standardization and Traceability

The Elecsys IGF-1 assay is traceable to the WHO IS 02/254 Reference Material. The Reference Material (WHO IS 02/254) is used for Reference Standardization to assign values to the Working Calibrator consisting of a native human serum sample panel (single donors, pools and spiked samples covering the entire measuring range). These Working Calibrators are for routine use in subsequent standardizations. The assigned values for CalSet IGF-1 are read from the Working Calibrator Curve.

3.2. Value Assignment

The CalSet IGF-1 assigned values are determined with the Elecsys IGF-1 assay. A Reference Material (WHO IS 02/254) is used for Reference Standardization to assign values to the Working Calibrator consisting of a native human serum sample panel (single donors, pools and spiked samples covering the entire measuring range). These Working Calibrators are for routine use in subsequent standardizations. The assigned values for CalSet IGF-1 are read from the Working Calibrator Curve.

For each CalSet IGF-1 manufactured, the calibrators are run in duplicate on four (4) **cobas e** 411 modules and four (4) modules of the MODULAR ANALYTICS E170/**cobas e** 601/**cobas e** 602 with all Elecsys IGF-1 reagent lots available. The assigned value of each calibrator is defined as the median value obtained over at least six (6) runs on at least three (3) modules of the respective calibrator. The assigned values for CalSet IGF-1 are read from the Working Calibrator Curve. The values must fall within specified acceptable ranges for each lot.

3.3. Calibrator Stability

Five studies were performed in order to verify the stability claims for CalSet IGF-1.

- Study 1: Stability at -20°C after reconstitution – combined study
- Study 2: Stability at 2-8°C after reconstitution – combined study
- Study 3: On-board stability at 20-25°C after reconstitution – combined study
- Study 4: Accelerated stability at 35°C – combined study
- Study 5: Real-time stability

3.3.1. Study 1: Stability at -20°C after reconstitution – combined study

The on-test and reference materials were tested in duplicate on the **cobas e** 411 immunoassay analyzer. The on-test material was reconstituted and stored in closed vials for 3 weeks at 35°C + 32 days at -20 ± 5°C + 7 hours at 20-25°C. The on-test signal recovery was calculated as percent of the reference value.

The reconstituted CalSet IGF-1 is stable for at least 31 days at -20 ± 5°C.

3.3.2. Study 2: Stability at 2-8°C after reconstitution – combined study

The on-test and reference materials were tested in duplicate on the **cobas e** 411 immunoassay analyzer. The on-test material was reconstituted and stored in closed vials for 3 weeks at 35°C + 73 hours at 2-8°C + 7 hours at 20-25°C. The on-test signal recovery was calculated as percent of the reference value.

The reconstituted CalSet IGF-1 is stable for at least 72 hours at 2-8°C.

3.3.3. Study 3: On-board stability at 20-25°C after reconstitution – combined study

The on-test and reference materials were tested in duplicate on the **cobas e** 411 immunoassay analyzer. The on-test material was reconstituted and stored in closed vials for 3 weeks at 35°C + 32 days at -20 ± 5°C + 7 hours at 20-25°C. The on-test signal recovery was calculated as percent of the reference value.

The reconstituted CalSet IGF-1 is stable for at least 6 hours on-board the analyzers at 20-25°C.

3.3.4. Study 4: Accelerated stability at 35°C – combined study

The on-test and reference materials were tested in duplicate on the **cobas e** 411 immunoassay analyzer. The on-test material was stored lyophilized (as supplied to the user) at 35°C for 3 weeks and afterwards reconstituted and stored for 73 hours at 2-8°C + 7 hours at 20-25°C. The reference material was a freshly reconstituted set of CalSet IGF-1 (stored at 2 - 8°C). After 3 weeks, the on-test and reference materials were tested in duplicate. The on-test signal recovery was calculated as a percent of the reference value.

The accelerated stability model employed met the specification.

3.3.5. Study 5: Real-time stability

For the on-going real-time stability study, the CalSet IGF-1 test material is stored at 2-8°C. The CalSets are tested in triplicate at specified intervals over the shelf life of the device up to the planned shelf life plus one month (13 months).

Real-time stability is calculated based on the recovery of signal of stressed calibrator (stored at 2-8°C) vs. unstressed calibrator (stored at -80°C). At the specified intervals over the shelf life,

the mean value of the stressed calibrator was calculated as a percent recovery of the unstressed value (each set is tested in duplicates at the same time point).

The lyophilized CalSet IGF-1 is stable up to the stated expiration date.

4. CONCLUSIONS

The information provided in this 510(k) Premarket Notification will support a determination of substantial equivalence for CalSet IGF-1. The data supports safe, effective devices which perform as well or better than the predicate device.