DEC 21 1999

K992456

GRADILEIDEN V 510(k) Submission
July, 1999

510(k) Summary

GradiLeiden V Test

(a)(1) The submitter's name, address, telephone number, a contact person, and the date the summary was prepared;

Submitter's Name: Gradipore Ltd

Submitter's Address: Lot 16 Riverside Corporate Park
35 - 105 Delhi Rd, North Ryde 2113
Australia

Submitter's Telephone: 1800 762 2620

Submitter's Contact: Rhonda Pilgrim
Regulatory Affairs Manager

Date 510(k) Summary Prepared: 21 July, 1999

(a)(2) The name of the device, including the trade or proprietary name if applicable, the common or usual name, and the classification name, if known;

Trade or Proprietary Name: GradiLeiden V

Common or Usual Name: APC Resistance Test

Classification Name: Hematology

(a)(3) An identification of the legally marketed device to which the submitter claims substantial equivalence;

Device Equivalent to: Coatest APC Resistance V

(a)(4) A description of the device.

Device Description: The GradiLeiden V Test is a lyophilized paired reagent containing 5 vials of whole diluted *Agkistrodon contortrix contortrix* venom and 5 vials of phospholipid rich Russell's Viper Venom time reagent.

(a)(5) A statement of the intended use of the device.

Device Intended Use:
GradiLeiden V is a simple functional clotting test system intended for screening of resistance to Activated Protein C in plasma from individuals with the Factor V (Leiden) defect. It can also be performed on plasma from patients on stabilized oral anticoagulant or heparin therapy.

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(a)(6) A summary of the technological characteristics of the new device in comparison to those of the predicate device.

GradiLeiden V is a clotting test based on lyophilised Russell's Viper Venom, which activates clotting at Factor X in the common pathway, while the Coatest APC Resistance V test is a clotting test based on an APTT system. The Factor V Leiden mutation affects Factor V in the common pathway, so both clotting tests are equally sensitive to the defect.

GradiLeiden V uses a lyophilised snake venom to activate the patient's own protein C while the Coatest APC Resistance V test uses lyophilised purified activated protein C.

Both tests can be automated in 2 stage clotting test systems with similar activation and acquisition times.

GradiLeiden V does not require dilution of plasma samples as the test is insensitive to heparin, Lupus Anticoagulants and to factor deficiencies caused by oral anticoagulants. Coatest APC Resistance V test requires dilution of patient samples in Factor V depleted plasma in order to eliminate sensitivity to heparin, Lupus Anticoagulants and oral anticoagulants.

(b)1) A brief discussion of the nonclinical tests submitted, referenced, or relied on in the premarket notification submission for a determination of substantial equivalency.

GradiLeiden V and Coatest APC Resistance V test both have the same intended use and can be used with the same patient groups. Both tests are automatable two stage clotting tests, wherein a blank test and a test in which either APC (Coatest APC Resistance V) or Venom activator (GradiLeiden V) are compared and a ratio obtained. The normal range for this ratio in both tests is reported as approximately 2-3. While both tests can be used for patients on oral anticoagulant or heparin therapy and for Lupus Anticoagulant positive patients, GradiLeiden V does not require plasma dilution while the Coatest APC Resistance V does. Within run precision for both tests is less than 5%.

(b)(2) A brief discussion of the clinical tests submitted, referenced, or relied on in the premarket notification submission for a determination of substantial equivalency.

GradiLeiden V was compared against the predicate device in a series of clotting assays, with all results confirmed by DNA analysis. Using a cut-off of 1.57 obtained by ROC analysis, GradiLeiden V correctly identified the Factor V Leiden status of 163/164 individuals (82 negative; 82 positive). These included 35/36 Oral Anticoagulated plasmas, 21/21 heparinised plasmas and 12/12 Lupus Anticoagulant positive plasmas. GradiLeiden V was tested using the Stago STA, Dade Behring BCS, Organon Teknika MDA180 and manual tilt tube technique. The test was found to have 100% sensitivity and 98.8% specificity at a cut-off of 1.57 determined by ROC analysis.

Total precision estimates for FVL+, borderline normal, and normal plasma are 8.9%, 1.6%, and 5.6%, respectively. Within run precision estimates for FVL+ and normal plasma are 1.1% and 1.9%. Within run precision at the cut-off is 0.9%

(b)3) The conclusions drawn from the nonclinical and clinical tests that demonstrate that the device is as safe, as effective, and performed as well or better than the legally marketed device identified in (a)(3).

Gradipore Ltd considers GradiLeiden V to be substantially equivalent to the Chromogenix AB Coatest APC Resistance V Test in terms of intended use, method comparison and overall performance characteristics.

17.0 QUALITY ASSURANCE/QUALITY CONTROL

The following is Gradipore Ltd's recommended quality control for the use of GradiLeiden V Test in clinical laboratories:

Each laboratory should establish its own normal range and abnormal range for each lot of GradiLeiden V Test reagent.

The use of control plasma is recommended for monitoring coagulation assays following established laboratory quality control procedures. NCCLS recommends controls be assayed at the initiation of testing, at least once each shift, or with each group of assays. In high volume laboratories, controls should be tested with at least every 40 samples, as per NCCLS tentative guidelines H28-T, 1992.

If control values are out of range, do not report patient results. Determine which part of the instrument/reagent/control system is not functioning properly and correct it. After corrective measures are implemented and documented following good laboratory practice, retest the controls. If they are within range, patient samples can be tested and reported.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Food and Drug Administration
2098 Gaither Road
Rockville MD 20850

DEC 21 1999

Ms. Rhonda Pilgrim M.SC.
Regulatory Affairs Manager
Gradipore Ltd.
Haemostasis
Lot 16 Riverside Corporate Park
35 – 105 Delhi Road
North Ryde 2113 Australia

Re: K992456
Trade Name: GradiLeiden V Test
Regulatory Class: II
Product Code: GGW
Dated: November 10, 1999
Received: November 17, 1999

Dear Ms. Pilgrim:

We have reviewed your Section 510(k) notification of intent to market the device referenced above and we 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). 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.

If your device is classified (see above) into either class II (Special Controls) or class III (Premarket Approval), it may be subject to such additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 895. A substantially equivalent determination assumes compliance with the Current Good Manufacturing Practice requirements, as set forth in the Quality System Regulation (QS) for Medical Devices: General regulation (21 CFR Part 820) and that, through periodic QS inspections, the Food and Drug Administration (FDA) will verify such assumptions. Failure to comply with the GMP regulation may result in regulatory action. In addition, FDA may publish further announcements concerning your device in the Federal Register. Please note: this response to your premarket notification submission does not affect any obligation you might have under sections 531 through 542 of the Act for devices under the Electronic Product Radiation Control provisions, or other Federal laws or regulations.

Under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88), this device may require a CLIA complexity categorization. To determine if it does, you should contact the Centers for Disease Control and Prevention (CDC) at (770) 488-7655.

This letter will allow you to begin marketing your device as described in your 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801 and additionally 809.10 for in vitro diagnostic devices), please contact the Office of Compliance at (301) 594-4588. Additionally, for questions on the promotion and advertising of your device, please contact the Office of Compliance at (301) 594-4639. Also, please note the regulation entitled, "Misbranding by reference to premarket notification"(21 CFR 807.97). Other general information on your responsibilities under the Act may be obtained from the Division of Small Manufacturers Assistance at its toll-free number (800) 638-2041 or (301) 443-6597, or at its internet address "http://www.fda.gov/cdrh/dsma/dsmamain.html".

Sincerely yours,

Steven Gutman

Steven I. Gutman, M.D, M.B.A.
Director
Division of Clinical
Laboratory Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

18.0 INTENDED USE STATEMENT

510(k) Number (If known): K992456

Device Name: GradiLeiden V Test

Indications For Use:

GradiLeiden V is a simple functional clotting test system intended for screening of resistance to Activated Protein C in plasma from individuals with the Factor V (Leiden) defect. It can also be performed on plasma from patients on stabilized oral anticoagulant or heparin therapy.

(PLEASE DO NOT WRITE BELOW THIS LINE-CONTINUE ON ANOTHER PAGE IF NEEDED)

Concurrence of CDRH, Office of Device Evaluation (ODE)

Peter E. Mayer

(Division Sign-Off)
Division of Clinical Laboratory Devices
510(k) Number K992456

Prescription Use ✓ OR Over-The-Counter Use_____
(Per 21 CFR 801.109)

(Optional Format 1-2-96)

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