DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
2098 Gaither Road
Rockville MD 20850

William R. Gilbert, Ph.D.
Manager, Scientific Affairs
Sigma Diagnostics
545 South Ewing Avenue
St. Louis, Missouri 63103

JUL 30 1997

Re: K972132
Sigma Diagnostics Valproic Acid FPIA Reagent Set Calibrators
Regulatory Class: II
Product Code: LEG
Dated: June 5, 1997
Received: June 6, 1997

Dear Dr. Gilbert:

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 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 requirement, 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/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

K 972132

SUMMARY OF SAFETY AND EFFECTIVENESS

VALPROIC ACID FPIA REAGENT SET AND CALIBRATORS

JUL 30 1997

Valproic acid (Depakene®) is an anticonvulsant drug used both alone and in combination with other drugs in the treatment of simple (petit mal) and complex absence seizures. The drug is also helpful in the treatment of myoclonic and tonic clonic seizures; however, it is less effective in controlling partial seizures.

The drug is rapidly and completely absorbed, peaking in approximately four hours. The half-life of valproic acid is approximately 15 hours; however, this is reduced in patients taking other anticonvulsants. The relationship between dosage, serum levels and clinical effectiveness for valproic acid has not been clearly defined. Therefore, serum concentrations should be monitored in order to achieve adequate seizure control while maintaining minimal serum levels. A review of the different methods used for this purpose was conducted.

The method of testing used by Sigma Diagnostics follows closely the antibody-antigen reaction scheme first introduced by Berson and Yallow (1) with a monitoring method employed by Dandlicker, *et al.*(2)

Material Safety Data Sheets (MSDS) for the chemicals used in preparing the reagents are readily available from the manufacturers and are routinely furnished to customers.

Patient samples, ranging from 13.63 to 131.08 ug/mL, were assayed using the Sigma Diagnostics Valproic Acid Reagents and the Abbott TDx Valproic Acid Reagent Pack. Results of the regression analysis gave a correlation coefficient of 0.996.

Precision studies indicate acceptable values can be obtained to differentiate between sub-therapeutic, therapeutic, and toxic levels.

Specificity of the monoclonal antibody used was assessed and found to be acceptable.

The safety and effectiveness of the Sigma Diagnostics Valproic Acid FPIA Reagent Set is demonstrated by its substantial equivalency to the Abbott Laboratories Valproic Acid TDx Reagent Set.

1. Yallow RS, and Berson SA, J. Clin. Invest., **39**, 1157, (1960).

2. Dandlicker WB, et al, "Application of Fluorescence Polarization to the Antigen-Antibody Reaction", Immunochemistry, Pergamon Press, Vol 1, pp 165-191, (1964).

510(k) Number (if known): _____

Device Name: Sigma Diagnostics Valproic Acid FPIA Reagent Set

Indications For Use:

Sigma Diagnostics Valproic Acid FPIA Reagent Set is intended to measure valproic acid, an anticonvulsant drug, in serum. Measurements obtained by this device are used in the diagnosis and treatment of valproic acid overdose and in monitoring levels of valproic acid to ensure appropriate therapy.

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

Concurrence of CDRH, Office of Device Evaluation (ODE)

(Division Sign-Off)
Division of Clinical Laboratory Devices
510(k) Number k970132

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