K972975

510(k) Summary

Submitter: ***Light Diagnostics***
28835 Single Oak Drive
Temecula, CA 92590
Tel: 909/676-8080
Fax: 909/676-9209

Contact Person: Cindy Penny

Product Name:

Trade Name: ***Light Diagnostics*** Rabies DFA Reagent
Common Name: Immunofluorescent Reagent
Classification Name: Antiserum, Fluorescent, Rabies Virus
Classification Number: 83GOI

Intended Use:

The ***Light Diagnostics*** **Rabies DFA Reagent** is intended for the detection of rabies antigens in culture and in acetone-fixed brain and submaxillary tissues of infected animals. Thus the assay could be used as an aid in the indirect diagnosis of human rabies virus infection. All specimens that are negative or indeterminate by DFA testing should be further tested by cell culture or animal inoculation methods.

Predicate Devices:

1) BECTON DICKINSON BBL® Anti-Rabies Globulin, Fluorescein Labeled (Catalog No. 40844)

Direct fluorescent antibody for qualitative detection of rabies antigens in tissue (brain and submaxillary salivary glands).

2) CENTOCOR, Inc., Centocor FITC Anti-Rabies Monoclonal Globulin.

Direct fluorescent antibody for detection of rabies in brains and submaxillary glands.

Device description:

Light Diagnostics Rabies DFA Reagent uses fluorescein-labeled monoclonal antibodies directed against the rabies nucleocapsid protein to detect the virus in infected tissue. The direct immunofluorescence assay requires incubation of a user-determined dilution of the reagent with suspected rabies-infected tissue such as brain (medulla, cerebellum, and hippocampus) and submaxillary salivary glands. If virus is present, the FITC-labeled monoclonal antibodies will bind to the nucleocapsid protein. Unbound antibody is removed by washing. The antigen-antibody complex is visualized using fluorescence microscopy. Positive reactions in infected tissue will appear as bright apple-green cytoplasmic inclusions or "dusting".

A blend of monoclonal antibodies are used in the ***Light Diagnostics*** Rabies DFA reagent. These monoclonal antibodies are specific for the rabies virus nucleocapsid protein. The use of monoclonal antibodies ensures increased specificity of the reagent and reduces the risk of non-specific background or interference.

Intended Use:

The ***Light Diagnostics*** **Rabies DFA Reagent** is intended for *in vitro* diagnostic use for the detection of rabies antigens in culture and in acetone-fixed brain and submaxillary tissues of infected animals. Thus the assay could be used as an aid in the indirect diagnosis of human rabies virus infection. All specimens that are negative or indeterminate by DFA testing should be further tested by cell culture or animal inoculation methods.

Technological Comparison of Methods:

The ***Light Diagnostics*** Rabies DFA Reagent is substantially equivalent to BECTON DICKINSON BBL® Anti-Rabies Globulin, Fluorescein Labeled and Centocor FITC Anti-Rabies Monoclonal Globulin in that:

A. All three methods are intended for use in the detection of rabies antigens in tissue.

B. All three methods are *in vitro* test methods.

C. All three methods use a direct immunofluorescence assay procedure for staining of slides prepared with brain tissue.

The methods differ in that:

BECTON DICKINSON reagent incorporates polyclonal (equine or bovine) immune globulin into FITC conjugates that serve as the detector antibodies.

Performance Data for ***Light Diagnostics*** Rabies DFA Reagent

1. Non-clinical evaluation:

   The conjugated monoclonal antibodies used in the reagent were tested against twenty (20) variants of rabies virus, specifically raccoon, North Central skunk, African dog, mongoose, Arctic fox, Myotis bat, Eptesicus II bat, EBLV II, EBLV I, red bat, Poland raccoon dog, red fox, Tadarida b.m. bat, Eptesicus I bat, vampire bat, silver-haired bat, hoary bat, ERA Vaccine, urban dog, and South Central skunk. These variants have been differentiated using panels of monoclonal antibodies, and represent all of the epidemiologically significant street rabies variants. The conjugated antibodies, tested as in the reagent formulation, have a strong affinity for all of the variants.

2. Clinical evaluation:

   The Light Diagnostics Rabies DFA Reagent was compared in clinical evaluation to the BECTON DICKINSON BBL® Anti-Rabies Globulin, Fluorescein Labeled and Centocor FITC Anti-Rabies Monoclonal Globulin for detection of rabies virus in brain tissue. Studies were performed at two sites in the United States. Site 1 was on the west coast and Site 2 was in the south central part of the country. Four hundred and fifty four (454) specimens from 23 animal species were submitted for testing at Site 1 and 1036 specimens from 25 animal species were submitted for testing at Site 2.

   The prevalence of positive specimens differed between the sites. At Site 1, 8.2% of the specimens were positive for rabies antigens, with foxes (25%), cows (25%), and bats (19.7%) having the highest positivity rate. Rabies antigen was also identified in raccoons (14.3%), skunks (3.8%) and cats (0.9%). Laboratory inoculation of mice with samples from other animals resulted in a positivity rate of 66.7%.

   Site 2 had a prevalence of 4.5%, with bats (31.4%), skunks (13.3%), and cows (9.1%) having the highest positivity rate. Rabies antigen was also identified in cats (1.0%).

   Complete agreement was seen between the commercially available *in vitro* diagnostic reagents and the Working Dilution of the FITC-conjugate

monoclonal reagent. All 83 specimens that were positive with the BBL and Centocor reagents were also positive with the Working Dilution of the reagent. The performance characteristics demonstrated at each of the sites are summarized below.

Performance Characteristics - Site 1

	BBL and Centocor Positive	BBL and Centocor Negative	Total
Test Positive	36	0	36
Test Negative	0	405	405
Total	36	405	

Relative sensitivity = 100% (36/36) [95% confidence interval = 0.903 to 1.00]
Relative specificity = 100% (405/405) [95% confidence interval = 0.991 to 1.00]

Performance Characteristics - Site 2

	BBL or Centocor Positive	BBL or Centocor Negative	Total
Test Positive	47	0	47
Test Negative	0	989	989
Total	47	989	

Relative sensitivity = 100% (47/47) [95% confidence interval = 0.925 to 1.00]
Relative specificity = 100% (989/989) [95% confidence interval = 0.996 to 1.00]

3. Conclusions drawn from evaluations:

Light Diagnostics Rabies DFA Reagent uses a standard direct immunofluorescence assay procedure for the detection of rabies virus in tissue. The monoclonal antibodies used in the reagent have been characterized so as to ensure specificity and reliability of the product. In clinical evaluations, the performance characteristics of the reagent was shown to be substantially equivalent to those of BECTON DICKINSON

BBL® Anti-Rabies Globulin, Fluorescein Labeled and Centocor FITC Anti-Rabies Monoclonal Globulin.

The characterization and clinical evaluation of the ***Light Diagnostics*** Rabies DFA Reagent demonstrates the safety and effectiveness of this product when used as intended, as described in the product insert.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
2098 Gaither Road
Rockville MD 20850

DEC 22 1998

Cindy D. Penny
Quality Assurance Manager
Chemicon International, Inc.
28835 Single Oak Drive
Temecula, CA 92590

Re: K972975
Trade Name: Light Diagnostics Rabies DFA Reagent
Regulatory Class: II
Product Code: GOI
Dated: November 6, 1998
Received: November 6, 1998

Dear Ms. Penny:

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 at (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

510(k) Number (if known): K972975

Device Name: Light Diagnostics Rabies DFA Reagent

Indications For Use: Light Diagnostics Rabies DFA Reagent is intended for the detection of rabies antigens in acetone-fixed tissues. Thus the assay could be used as an aid in the indirect diagnosis of human rabies virus infection. All specimens that are negative or indeterminate by DFA testing should be further tested by cell culture or animal inoculation methods.

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

Concurrence of CDRH, Office of Device Evaluation (ODE)

Prescription Use X OR Over-The-Counter-Use _____
(Per 21 CFR 801.109)

Woody Dubois
(Division Sign-Off)
Division of Clinical Laboratory Devices
510(k) Number K972975

(Optional Format 1-2-96)