6.0 510(K) SUMMARY

(A) Name of Device and Classification

Tradename: Bartels CINAkit CMV Antigenemia

Classification: Cytomegalovirus indirect immunofluorescence assay that consists of antisera which has been classified as a Class II (Performance Standards) device, product code, 834N, (21 CFR 866.3175).

(B) Legally Marketed Device

BARTELS CINAKIT CMV Antigenemia claims substantial equivalance to the BIOTEST CMV BRITE TEST Kit (K951550), currently in commercial distribution by BIOTEST Diagnostics, Denville, New Jersey (USA).

(C) Device Description

BARTELS CINAKIT CMV Antigenemia is an indirect immunofluorescence test that allows detection of Human Cytomegalovirus antigen in leukocytes from peripheral blood. The test uses a monoclonal antibody pool (1C3, AYM-1) which recognizes the 65-68kDa lower matrix structural phosphoprotein (pp) (protein kinase, pp65, present in the nucleus of cells. The antibody pool (blended antibodies) recognizes two epitopes on the protein.

Leukocytes are prepared from whole blood by dextran sedimentation and centrifugation; slides are prepared, fixed in formalin and permeabilized on detergent (NP40). Staining is accomplished with primary murine monoclonal antibodies to the pp65 antigen and $F(Ab^1)_2$ fluorescein-conjugated anti-mouse immunoglobulin secondary antibody. The slides are read using a fluorescence microscope.

The substantial equivalence claim between Bartels CINAkit CMV Antigenemia and Biotest CMV Brite Test is based on the attached comparison table (Table 1) and clinical study data.

BARTELS CINAKIT CMV Antigenemia Method :

1. Isolation of peripheral blood leukocytes
2. Preparation of cytospin slides
3. Fixation and permeabilization
4. Indirect immunofluorescence staining using anti CMV pp65
5. Interpretation of results

Leukocytes are isolated from whole blood by dextran sedimentation of erythrocytes and centrifugation of leukocytes followed by hypotonic lysis of residual erythrocytes with

ammonium chloride. Slides are prepared fixed in formalin and permeabilized with detergent. Staining is accomplished with primary murine monoclonal antibodies to the pp65 antigen and $F(Ab^1)_2$ fluorescein-conjugated anti-mouse immunoglobulin secondary antibody. The slides are read using a fluorescence microscope.

Immunofluorescence is the preferred method of staining. It has been reported that techniques used to block endogenous enzymatic activity (peroxidase or alkaline phosphatase) can destroy the antigen recognized in antigenemia. Bartels' blended antibody preparation targets different epitopes on the pp65 antigen and thus ensures avoidance of false negatives that may be caused by mutation of one of the epitopes recognized. This anti-pp65 preparation stains cells in positive samples.

(D) Intended Use

Bartels CINAkit CMV Antigenemia is intended for use as an aid in the diagnosis of Cytomegalovirus (CMV) infection by the rapid direct qualitative detection of CMV pp65 antigen in human blood leukocytes by indirect immunofluorescence (IF). This product is not intended to be used for testing (i.e. screening) blood or plasma donors.

(E) Comparison with the Predicate Device

TABLE 1

Product Name	**Bartels CINAkit CMV Antigenemia**	**Biotest CMV Brite**
Intended Use Statement	"Bartels CINAkit CMV Antigenemia is intended for use as an aid in the diagnosis of Cytomegalovirus (CMV) infection by the rapid direct qualitative detection of CMV pp65 antigen in human blood leukocytes by indirect immunofluorescence (IF). This product is not intended to be used for testing (i.e. screening) blood or plasma donors."	"The Biotest CMV Brite Test Kit is intended for the qualitative detection of Cytomegalovirus (CMV) lower matrix protein pp65 by indirect immunofluorescence using microscopy in isolated peripheral blood leukocytes obtained from ethylenediaminetetraacetic acid (EDTA) and heparin anticoagulated human peripheral blood. The detection of CMV pp65 in human peripheral blood cells aids in the diagnosis of acute or reactivated CMV infection. This product is not FDA cleared (approved) for use in testing (i.e. screening) of blood or plasma donors."

Target Population	Individuals suspected of acute or reactivated CMV infection.	Individuals suspected of acute or reactivated CMV infection.
Design/format	Indirect immunofluorescence assay (IFA)	Indirect immunofluorescence assay (IFA)
Materials	Cocktail (2) of murine monoclonal antibodies (CINA pool, 1C3/AYM-1) against lower matrix structural phospoprotein (pp65), FITC-conjugated secondary polyclonal antibody, Evans Blue counterstain, dextran solution, erythrocyte lysing reagents, fixative, sample diluents, and mounting fluid.	Cocktail (2) of murine monoclonal antibodies (C10/C11) against lower matrix structural phospoprotein (pp65), FITC-conjugated secondary polyclonal antibody, Evans Blue counterstain, dextran solution, erythrocyte lysing reagents, fixative, sample diluents, and mounting fluid.
Performance Characteristics	Sensitivity: 82.86% Specificity: 88.67% Accuracy: 88.06%	Sensitivity: 82.86% Specificity: 87.33% Accuracy: 86.87%
Risk to patient	No unique issues of safety or effectiveness.	
Specimen Type	Anticoagulated [EDTA, heparin, or Adenine Citrate Dextrose (ACD)] human venous blood.	Anticoagulated (EDTA, heparin) human venous blood.
Analyte	CMV lower matrix structural phospoprotein (pp65)	CMV lower matrix structural phospoprotein (pp65)
Controls	Optional Positive and Negative Intracel CMV Control Slides (B1029-81B) not included in kit.	Positive and Negative Control Slides (20 per 100 test lab) Leukocytes and SF9 Insect cells
Kit Size	100 Tests	100 Tests
Cell Count Required	2 x 10^5 cells	1.5 x 10^5 cells

(F) Performance Data

1. **Cross Reactivity**

Bartels CINAkit CMV Antigenemia has been tested against the following viruses and has shown no cross-reactivity :

Human Immunodeficiency Virus (HIV) – Virion (Switzerland)
Human Herpes Simplex Virus Type 1 (HSV-1) strain McIntyre (HHV-1)
Human Herpes Simplex Virus Type 2 (HSV-2) strain M.S. (HHV-2)
Varicella Zoster Virus (VZV) strain ATCC VR586 (HHV-3)
Epstein-Barr Virus (EBV) strain B95.8 (HHV-4)

Herpesvirus Type 6 (HHV-6) A variant strain TAN
Herpesvirus Type 6 (HHV-6) B variant strain HST
Influenza A – Puerto Rico/8/34 strain
Influenza B – Russia/69 strain
Parainfluenza Type I – C35 strain
Parainfluenza Type II –Greer strain
Parainfluenza Type III –Russia/69 strain or S.B. strain
Adenovirus –Type 3 GB strain
Respiratory Syncytial Virus – Long VR26 strain

Each of the aforementioned 14 viruses was found to be negative by immunofluorescence using the CINAkit reagents. However, positive control antibodies produced staining of +3 to +4 for its corresponding slide. It can be concluded that the Bartels CINAkit CMV monoclonal antibodies are highly specific for CMV.

Note: Absence of cross-reactivity against Echovirus 11 and 30 has not been established

2. Performance Characteristics

Bartels CINAkit CMV Antigenemia was compared to CMV virus detection by the culture method using human peripheral blood leukocytes. Three hundred thirty-five (335) clinical specimens were evaluated in comparison to the culture method. In the same study, the performance of a comparable commercial CMV Antigenemia test ("Other CMV") was also was compared to CMV virus detection by culture using human peripheral blood leukocytes from the same specimens. The performance data for the two Antigenemia tests, using the culture method as the "gold standard", are presented below:

TABLE 2

Antigenemia Method/Result	**Culture (+)** n=35	**Culture (-)** n=300
Bartels CINAkit CMV (+) n=63	29	34
Bartels CINAkit CMV (-) n=272	6	266
Other CMV (+) n=67	29	38
Other CMV (-) n=268	6	262

Total n = 335

The performance characteristics for Bartels CINAkit CMV Antigenemia, using the culture method as the "gold standard", are as follows:

Sensitivity = 29/35 = 83% (95% Confidence interval = 70.4 – 95.3%)
Specificity = 266/300 = 89% (95% Confidence interval = 85.1 – 92.3%)

(G) Conclusion

Bartels Cina kit CMV Antigenemia is substantially equivalent to the predicate device, Biotest CMV Brite.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
2098 Gaither Road
Rockville MD 20850

DEC 14 1998

Fedora Daye Contreras, MPH
Regulatory Affairs Associate
Intracel
1330 Piccard Drive
Rockville, MD 20850

Re: K982311
Trade Name: Bartels CINAkit CMV Antigenemia
Regulatory Class: II
Product Code: GQH
Dated: October 2, 1998
Received: October 2, 1998

Dear Ms. Knapp:

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):_____

Device Name: Bartels CINAkit™ CMV Antigenemia Test

Indications For Use:

The Bartels CINAkit™ CMV Antigenemia Test is intended for use as an aid in the diagnosis of Cytomegalovirus (CMV) infection by the rapid direct qualitative detection of CMV pp65 antigen in human blood leukocytes by indirect immunofluorescence (IF). This product is not intended to be used for testing (i.e. screening) blood or plasma donors.

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

Concurrence of CDRH, Office of Device Evaluation (ODE)

Woody Dubois

(Division Sign-Off)
Division of Clinical Laboratory Devices
510(k) Number K982311

Prescription Use___ OR **Over-The-Counter Use**___
(Per 21 CFR 801.109)

(Optional Format 1-2-96)