SEP 1 1 2008

FUJIREBIO Diagnostics, Inc

510(k) SUMMARY

This summary of 510(k) safety and effectiveness information is being submitted in accordance with the requirements of SMDA 1990 and 21 CFR 807.92.

The assigned 510(k) number is: K080751.

Submitter Information

Address:	Fujirebio Diagnostics, Inc. 201 Great Valley Parkway Malvern, PA 19355
Contact person:	Stacey Moll (610) 240-3843 molls@fdi.com
Summary preparation date:	March 10, 2008

Name of Device

Trade/Proprietary Name:	ARCHITECT Cyclosporine Assay ARCHITECT Cyclosporine Calibrators
Common/Usual Name:	Cyclosporine Test Systems Calibrator
Regulation Number:	21 CFR 862.1235 21 CFR 862.3200
Regulatory Class:	Class II
Product Code:	MKW DLJ

Predicate Device

ABBOTT TDx/TDxFLx Cyclosporine Monoclonal Whole Blood (P890025[1] and supplement 7)

Device Description

The ARCHITECT Cyclosporine assay is a two-step immunoassay for the quantitative determination of cyclosporine in human whole blood using CMIA technology with flexible assay protocols, referred to as Chemiflex.

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[1]note: cyclosporine test systems have been reclassified into Class II since the predicate was approved

Prior to the initiation of the automated ARCHITECT sequence, a manual pretreatment step is performed in which the whole blood sample is lysed with a solubilization reagent, extracted with a precipitation reagent and centrifuged. The supernatant is decanted into a Transplant Pretreatment Tube, which is placed onto the ARCHITECT *i* System.

In the first step, sample, assay diluent, and anti-cyclosporine coated paramagnetic microparticles are combined to create a reaction mixture. Cyclosprorine present in the sample binds to the anti-cyclosporine coated microparticles. After washing, cyclosporine acridinium-labeled conjugate is added to create a reaction mixture in the second step. Following another wash cycle, pre-trigger and trigger solutions are added to the reaction mixture. The resulting chemiluminescent reaction is measured as relative light units (RLUs). An indirect relationship exists between the amount of cyclosporine in the sample and the RLUs detected by the ARCHITECT *i* System optics.

Intended Use

Reagent Kit
The ARCHITECT Cyclosporine assay is a chemiluminescent microparticle immunoassay (CMIA) for the quantitative determination of cyclosporine in human whole blood on the ARCHITECT *i* System. The ARCHITECT Cyclosporine assay is used as an aid in the management of heart, liver, and kidney transplant patients receiving cyclosporine therapy.

Calibrator Kit
The ARCHITECT Cyclosporine Calibrators are for the calibration of the ARCHITECT *i* System when used for the quantitative determination of cyclosporine in human whole blood.

Whole Blood Precipitation Reagent Kit
The ARCHITECT Cyclosporine Whole Blood Precipitation Reagent is for the extraction of cyclosporine from samples (human whole blood patient specimens, controls, and ARCHITECT Cyclosporine Calibrators) to be tested on the ARCHITECT *i* System.

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Statement of Substantial Equivalence

The ARCHITECT Cyclosporine assay is a chemiluminescent microparticle immunoassay (CMIA) for the quantitative determination of cyclosporine in human whole blood on the ARCHITECT *i* System. The ARCHITECT Cyclosporine assay is used as an aid in the management of heart, liver and kidney transplant patients receiving cyclosporine therapy.

The ARCHITECT Cyclosporine assay is substantially equivalent to the TDx/TDxFLx Cyclosporine Monoclonal Whole Blood assay. Both of the devices are IVD products and are indicated for the quantitative determination of cyclosporine in human whole blood and used as an aid in the management of heart, liver and kidney transplant patients receiving cyclosporine therapy.

A study was performed using human whole blood specimens from heart, renal and liver transplant patients receiving cyclosporine therapy, where regression analysis was performed using the Passing-Bablok[2] method. Data from the study are summarized in the following table.

ARCHITECT Cyclosporine vs. TDx/TDxFLx Cyclosporine Monoclonal Whole Blood			
Number of Observations	**Intercept (95% CI[a])**	**Slope (95% CI)**	**Correlation Coefficient**
227	-24.65 (-32.54 to -19.99)	0.93 (0.91 to 0.95)	0.99

[a] Confidence Interval
Specimen Range (ARCHITECT): 31.3 ng/mL to 1457.3 ng/mL
Specimen Range (TDx): 44.99 ng/mL to 1457.3 ng/mL

Additional testing of the above sample was completed with LC/MS/MS, where regression analysis was performed using the Passing-Bablok[1] method. Data from the study are summarized in the following table.

ARCHITECT Cyclosporine vs. LC/MS/MS			
Number of Observations	**Intercept (95% CI)**	**Slope (95% CI)**	**Correlation Coefficient**
227	-24.94 (-32.71 to -19.18)	1.20 (1.17 to 1.23)	0.99

Specimen Range (ARCHITECT): 31.3 ng/mL to 1457.3 ng/mL
Specimen Range (LC/MS/MS): 31.3 ng/mL to 1220 ng/mL

[2] Passing H, Bablok W. A new biometrical procedure for testing the equality of measurements from two different analytical methods. *J Clin Chem Clin Biochem* 1983; 21(11)709-20.

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A comparison of the features of the ARCHITECT Cyclosporine assay and the TDx/TDxFLx Cyclosporine Monoclonal Whole Blood assay are as follows:

Similarities		
	ARCHITECT Cyclosporine (Proposed Device)	**TDx/TDxFLx Cyclosporine Monoclonal Whole Blood (Predicate Device) P890025[3] and supplement 7**
Device Type	*In vitro* diagnostic	*In vitro* diagnostic
CFR section	862.1235	862.1235
Product Usage	Clinical and Hospital laboratories	Clinical and Hospital laboratories
Intended Use	Quantitative determination of cyclosporine in human whole blood as an aid in the management of heart, liver and kidney transplant patients receiving cyclosporine therapy.	Quantitative determination of cyclosporine in human whole blood as an aid in the management of heart, liver and kidney transplant patients receiving cyclosporine therapy.
Type of Specimen	Human Whole Blood	Human Whole Blood
Specimen Pretreatment Step	Manual extraction of cyclosporine in human whole blood	Manual extraction of cyclosporine in human whole blood
Calibrators	6 Levels (0 – 1500 ng/mL)	6 Levels (0 – 1500 ng/mL)
Calibrator Matrix	Processed human whole blood	Processed human whole blood
Antibody	Mouse monoclonal (anti – cyclosporine)	Mouse monoclonal (anti – cyclosporine)
Interpretation of Results	Calibrator Curve	Calibrator Curve
Precipitation Reagent	Zinc sulfate solution in methanol and ethylene glycol.	Zinc sulfate solution in methanol and ethylene glycol
Solubilization Reagent	Surfactants in water	Surfactants in water

Differences		
	ARCHITECT Cyclosporine (Proposed Device)	**TDx/TDxFLx Cyclosporine Monoclonal Whole Blood (Predicate Device) P890025[4] and supplement 7**
Instrument System	ARCHITECT System	TDx/TDxFLx System
Principle of Operation	Chemiluminscent Microparticle Immunoassay (CMIA)	Fluorescence Polarization Immunoassay (FPIA)
Detection	Cyclosporine acridinium-labeled conjugate in citrate buffer with detergent	<0.01% fluorescein tracer in buffer containing surfactant and protein stabilizer.
Capture	Anti-cyclosporine (mouse, monoclonal) coated paramagnetic	<25% Antibody (mouse monoclonal) in buffer with protein

[3]note: cyclosporine test systems have been reclassified into Class II since the predicate was approved

[4]note: cyclosporine test systems have been reclassified into Class II since the predicate was approved

	microparticles in MOPS buffer with protein stablizers.	stabilizer.
Classification and Product Code	Class II, MKW	Class II, MGU
Specimen Collection Method	EDTA Whole Blood Collection Tubes	EDTA and Heparin Whole Blood Collection Tubes

Performance Characteristics

Precision:

A study was performed with the ARCHITECT Cyclosporine assay based on guidance from the Clinical and Laboratory Standards Institute, document (CLSI, formerly NCCLS) Protocol EP5-A2. Abbott Immunosuppressant-MCC (levels 1, 3, and 4) and two pooled patient samples and 3 human whole blood samples spiked with cyclosporine were assayed, using two lots of reagents, on two instruments, in replicates of two at two separate times per day for 20 days. Each reagent lot used a single calibration curve throughout the study.

The total precision %CV of the ARCHITECT Cyclosporine assay was determined to be less than or equal to 15%.

Linearity:

A dilution linearity study was performed by diluting high concentration cyclosporine whole blood specimens with the ARCHITECT Cyclosporine Calibrator A. The concentration of cyclosporine was determined for each dilution of sample and the mean percent (%) recovery was calculated.

The ARCHITECT Cyclosporine assay was determined to have a mean recovery within 10% of the expected result for diluted samples.

Functional Sensitivity:

Whole blood specimens were spiked with cyclosporine to achieve approximate concentrations from 5 to 50 ng/mL and tested in replicates of 10, twice a day, for five days. At the upper 95% confidence limit, the lowest ARCHITECT Cyclosporine assay value exhibiting a 20% CV was calculated to be 20.7 ng/mL.

Analytical Sensitivity:

The limit of detection for the ARCHITECT Cyclosporine assay, defined as the concentration at two standard deviations above the ARCHITECT Cyclosporine Calibrator A (0.0 ng/mL) was calculated to be 4.7 ng/mL at the 95% confidence (based on one study with n=24 runs, 10 replicates calibrator A and 4 replicates calibrator B per run).

Interference:

Whole blood specimens were supplemented with various drugs and potentially interfering compounds (triglycerides, hematocrit, bilirubin, total protein, cholesterol, uric acid, HAMA, and

rheumatoid factor [RF]). The average recovery observed during the study ranged from 97 to 108%.

Specificity:

Aliquots of whole blood specimens were augmented with cyclosporine, targeting values ranging from 30 to 1500 ng/mL. These five specimens were spiked with cross-reactant solution. Data from this study are summarized in the following table.

Metabolite	Amount Added (ng/mL)	Mean Excess Concentration Detected (ng/mL, n=5)	% Cross Reactivity[a]
AM1	1000	0.7	0.1
AM1c	1000	10.2	1.0
AM4N	1000	-5.9	-0.6
AM9	1000	-1.6	-0.2
AM19	1000	-4.5	-0.4

[a] Cross-reactivities as estimated by interference with the measurement of Cyclosporine in whole blood specimens.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
2098 Gaither Road
Rockville MD 20850

SEP 11 2008

Fujirebio Diagnostics, Inc.
c/o Ms. Stacey Moll
Regulatory Affairs Specialist
201 Great Valley Pkwy.
Malvern, PA 19355

Re: k080751
Trade Name: Architect Cyclosporine Assay
Regulation Number: 21 CFR 862. 1235
Regulation Name: Cyclosporine Test System
Regulatory Class: Class II
Product Codes: MKW, DLJ
Dated: August 25, 2008
Received: August 26, 2008

Dear Ms. Moll:

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.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to such additional controls. Existing major regulations affecting your device can be found in Title 21, Code of Federal Regulations (CFR), Parts 800 to 895. 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); and good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820).

This letter will allow you to begin marketing your device as described in your Section 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 information about the application of labeling requirements to your device, or questions on the promotion and advertising of your device, please contact the Office of In Vitro Diagnostic Device Evaluation and Safety at (240) 276-0490. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (240) 276-3150 or at its Internet address at http://www.fda.gov/cdrh/industry/support/index.html.

Sincerely yours,

Jean M. Cooper, M.S., D.V.M.

Jean M. Cooper, M.S., D.V.M.
Director
Division of Chemistry and Toxicology
Office of *In Vitro* Diagnostic Device
Evaluation and Safety
Center for Devices and
Radiological Health

Enclosure

Indications for Use

510(k) Number (if known): K080751

Device Name: ARCHITECT Cyclosporine

Indications For Use:

Reagent Kit

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Prescription Use ✓ AND/OR Over-The-Counter Use _____
(Part 21 CFR 801 Subpart D) (21 CFR 801 Subpart C)

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

Concurrence of CDRH, Office of In Vitro Diagnostic Devices (OIVD)

Division Sign-Off

Office of In Vitro Diagnostic Device
Evaluation and Safety

510(k) K080751