



Read Highlighted Changes
Revised December, 2008

CMV IgG

Customer Service

For additional product information, please contact your local customer service organization.

This package insert must be read carefully prior to use. Package insert instructions must be carefully followed. Reliability of assay results cannot be guaranteed if there are any deviations from the instructions in this package insert.

Key to symbols used

REF	List Number	ASSAY CD-ROM	Assay CD-ROM
IVD	<i>In Vitro</i> Diagnostic Medical Device	CONTROL NO.	Control Number
LOT	Lot Number	REAGENT LOT	Reagent Lot
	Expiration Date	REACTION VESSELS	Reaction Vessels
	Store at 2-8°C	SAMPLE CUPS	Sample Cups
	Caution, consult accompanying documents	SEPTUM	Septum
SN	Serial Number	REPLACEMENT CAPS	Replacement Caps
	Manufacturer		

See **REAGENTS** section for a full explanation of symbols used in reagent component naming.

NAME

ARCHITECT CMV IgG

INTENDED USE

The ARCHITECT CMV IgG assay is a chemiluminescent microparticle immunoassay (CMIA) for the qualitative detection and semi-quantitative determination of IgG antibodies to Cytomegalovirus in human serum and plasma.

SUMMARY AND EXPLANATION OF TEST

Infections with Cytomegalovirus (CMV), a member of the herpesvirus family, are common in man and are usually mild and asymptomatic. However, in pregnant women,¹ newborns,² and immunocompromised individuals^{3,4} CMV infections may pose a significant medical risk.

The provision of seronegative blood products to selected patients remains a vital consideration in patient management. Serologic tests can be used to identify seronegative individuals⁵ and seronegative donors of organs or blood products.

In utero infection may result in sequelae of varying degree including mental retardation, chorioretinitis, hearing loss and neurologic problems. Since the risk of *in utero* virus transmission and CMV related damage of the fetus is strongly increased during primary infection, reliable recognition of primary CMV infections is of high importance for pregnant women.⁶ Thus, the presence of CMV-specific IgG antibody does not assure protection from disease. An individual may undergo primary infection with CMV, reinfection with exogenous virus or reactivation of latent virus.

If primary infection needs to be excluded, CMV IgG reactive samples should be tested for CMV IgM and CMV IgG Avidity. A positive CMV IgM result in connection with low avidity result is a strong indicator of a primary CMV infection within the last 4 months.

CMV IgG	CMV IgM	CMV IgG Avidity	Indication for...
nonreactive	nonreactive	N/A	no infection
reactive	nonreactive	high avidity	past infection; low risk for <i>in utero</i> transmission
reactive	reactive	low avidity	primary infection; high risk for <i>in utero</i> transmission
reactive	reactive	high avidity	non-primary infection; low risk for <i>in utero</i> transmission

A substantial rise in anti-CMV IgG concentrations in sequential samples taken from an individual accompanied by the presence of anti-CMV IgM could also indicate serological evidence of active infection.

BIOLOGICAL PRINCIPLES OF THE PROCEDURE

The ARCHITECT CMV IgG assay is a two-step immunoassay for the qualitative detection and semi-quantitative determination of IgG antibodies to Cytomegalovirus in human serum and plasma with flexible assay protocols, referred to as Chemiflex.

In the first step, sample, assay diluent, and CMV virus lysate (strain AD169) coated paramagnetic microparticles are combined. Anti-CMV IgG present in the sample binds to the CMV virus lysate (strain AD169) coated microparticles. After washing, murine acridinium-labeled anti-human IgG conjugate is added to create a reaction mixture. 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). A direct relationship exists between the amount of anti-CMV IgG in the sample and the RLUs detected by the ARCHITECT *i* System optics. The presence or absence of anti-CMV IgG in the sample is determined by comparing the chemiluminescent signal in the reaction to the cutoff signal determined from a previous calibration. If the chemiluminescent signal in the specimen is greater than or equal to the cutoff signal, the sample is considered reactive for anti-CMV IgG. For additional information on system and assay technology refer to the ARCHITECT System Operations Manual, Section 3.

REAGENTS

Reagent Kit, 100/400 Tests

NOTE: Some kit sizes are not available in all countries or for use on all ARCHITECT *i* Systems. Please contact your local distributor.

ARCHITECT CMV IgG Reagent Kit (6C15)

- **MICROPARTICLES** 1 or 4 Bottle(s) (6.6 mL per 100-test bottle) CMV virus lysate (strain AD169) coated microparticles in TRIS buffered saline. Minimum concentration: 0.08% solids. Preservatives: ProClin 300 and antimicrobial agents.
- **CONJUGATE** 1 or 4 Bottle(s) (5.9 mL per 100-test bottle) Murine acridinium-labeled anti-human IgG in MES buffer. Minimum concentration: 44 ng/mL. Preservatives: sodium azide and antimicrobial agents.
- **ASSAY DILUENT** 1 or 4 Bottle(s) (10.0 mL per 100-test bottle) Assay Diluent: CMV IgG assay diluent containing calf serum and MES buffer. Preservatives: ProClin 300 and ProClin 950.

Other Reagents

ARCHITECT *i* Pre-Trigger Solution

- **PRE-TRIGGER SOLUTION** Pre-Trigger Solution containing 1.32% (w/v) hydrogen peroxide.

ARCHITECT *i* Trigger Solution

- **TRIGGER SOLUTION** Trigger Solution containing 0.35 N sodium hydroxide.

ARCHITECT *i* Wash Buffer

- **WASH BUFFER** Wash Buffer containing phosphate buffered saline solution. Preservatives: antimicrobial agents.

WARNINGS AND PRECAUTIONS

- **IVD**

Safety Precautions

-  **CAUTION:** This product contains human sourced infectious and/or potentially infectious components. Refer to the **REAGENTS** section of this package insert. No known test method can offer complete assurance that products derived from human sources or inactivated microorganisms will not transmit infection. Therefore, it is recommended that all human sourced materials be considered potentially infectious and handled with appropriate biosafety practices.
- Microparticles and Assay Diluent contain methylisothiazolones which are components of ProClin. These components are classified per applicable European Community (EC) Directives as: Irritant (Xi). The following are the appropriate Risk (R) and Safety (S) phrases:



- R43 May cause sensitization by skin contact.
- S24 Avoid contact with skin.
- S35 This material and its container must be disposed of in a safe way.
- S37 Wear suitable gloves.
- S46 If swallowed, seek medical advice immediately and show this container or label.

- The conjugate contains sodium azide. For a specific listing, refer to the **REAGENTS** section of this package insert. This material and its container must be disposed of in a safe way.
- For information on the safe disposal of sodium azide and a detailed discussion of safety precautions during system operation, refer to the ARCHITECT System Operations Manual, Section 8.
- For product not classified as dangerous per European Directive 1999/45/EC as amended - Safety data sheet available for professional user on request.

Handling Precautions

- Do not use reagent kits beyond the expiration date.
- **Do not pool reagents within a kit or between reagent kits.**
- Before loading the ARCHITECT CMV IgG Reagent Kit on the system for the first time, the microparticle bottle requires mixing to resuspend the microparticles that have settled during shipment. For microparticle mixing instructions, refer to the **PROCEDURE, Assay Procedure** section of this package insert.
- **Septums MUST be used to prevent reagent evaporation and contamination and to ensure reagent integrity. Reliability of assay results cannot be guaranteed if septums are not used according to the instructions in this package insert.**
 - To avoid contamination, wear clean gloves when placing a septum on an uncapped reagent bottle.
 - When handling conjugate vials, change gloves that have contacted human serum or plasma, since introduction of human IgG will result in a neutralized conjugate.
 - Once a septum has been placed on the reagent bottle, **do not invert the bottle** as this will result in reagent leakage and may compromise assay results.
- Over time, residual liquids may dry on the septum surface. These are typically dried salts, which have no effect on assay efficacy.
- For a detailed discussion of handling precautions during system operation, refer to the ARCHITECT System Operations Manual, Section 7.

Storage Instructions

-  The ARCHITECT CMV IgG Reagent Kit must be stored at 2-8°C in an upright position and may be used immediately after removal from 2-8°C storage.
- When stored and handled as directed, reagents are stable until the expiration date.
- The ARCHITECT CMV IgG Reagent Kit may be stored on board the ARCHITECT *i* System for a maximum of 30 days. After 30 days, the reagent kit must be discarded. For information on tracking onboard time, refer to the ARCHITECT System Operations Manual, Section 5.
- Reagents may be stored on or off the ARCHITECT *i* System. If reagents are removed from the system, store them at 2-8°C (with septums and replacement caps) in an upright position. For reagents stored off the system, it is recommended that they be stored in their original trays and boxes to ensure they remain upright. **If the microparticle bottle does not remain upright (with a septum installed) while in refrigerated storage off the system, the reagent kit must be discarded.** After reagents are removed from the system, initiate a reagent scan to update the onboard stability timer.
- It is recommended that the assay be calibrated every 30 days.

Indications of Reagent Deterioration

When a control value is out of the specified range, it may indicate deterioration of the reagents or errors in technique. Associated test results are invalid and samples must be retested. Assay recalibration may be necessary. For troubleshooting information, refer to the ARCHITECT System Operations Manual, Section 10.

INSTRUMENT PROCEDURE

Depending on the ARCHITECT *i* system used, the ARCHITECT CMV IgG assay has the following requirements:

ARCHITECT <i>i</i> Systems	Assay	Required System Software	CD-ROM List Number	CD-ROM Version
<i>i</i> 1000	CMV IgG	4.01 or higher	1P61-03	3.0 or higher
	CMV IgGR	5.0 or higher	1P61-04	4.0 or higher
All other <i>i</i> Systems	CMV IgG	2.6 or higher	6E59-29	29 or higher
	CMV IgGR	5.0 or higher	6E59-29	29 or higher

The assay files previously installed on the *i*2000/*i*2000SR from CD-ROM versions 21-28 can still be used on system software versions 2.6 or higher.

- An ARCHITECT CMV IgG assay file must be installed on the ARCHITECT *i* System from the ARCHITECT *i* Assay CD-ROM before performing the assay. For detailed information on assay file installation and on viewing and editing assay parameters, refer to the ARCHITECT System Operations Manual, Section 2.
- The following assay files are available:
 - “CMV IgG” - which does not automatically dilute and retest specimens with an anti-CMV IgG concentration of > 250.0 AU/mL.
 - “CMV IgG R” - which automatically dilutes and retests specimens with an anti-CMV IgG concentration of > 250.0 AU/mL.
- For information on printing assay parameters, refer to the ARCHITECT System Operations Manual, Section 5.
- For a detailed description of system procedures, refer to the ARCHITECT System Operations Manual.

SPECIMEN COLLECTION AND PREPARATION FOR ANALYSIS

Specimen Types

The specimen collection tubes listed below were verified to be used with the ARCHITECT CMV IgG assay. Other specimen collection tubes have not been tested with this assay.

- Human serum (including serum collected in serum separator tubes)
- Human plasma collected in:
 - Plasma separator tubes (lithium heparin)
 - Potassium EDTA
 - Sodium citrate
 - Lithium heparin
 - Sodium heparin
 - ACD
 - CPDA-1
 - CPD
 - Potassium oxalate/sodium fluoride
- Liquid anticoagulants may have a dilution effect resulting in lower concentrations for individual patient specimens.
- The ARCHITECT *i* System does not provide the capability to verify specimen type. It is the responsibility of the operator to verify that the correct specimen types are used in the ARCHITECT CMV IgG assay.

Specimen Conditions

- Do not use specimens with the following conditions:
 - heat-inactivated
 - pooled
 - grossly hemolyzed (> 500 mg/dL)
 - obvious microbial contamination
 - cadaver specimens or any other body fluids
- For accurate results, serum and plasma specimens should be free of fibrin, red blood cells, or other particulate matter. Serum specimens from patients receiving anticoagulant or thrombolytic therapy may contain fibrin due to incomplete clot formation.
- Use caution when handling patient specimens to prevent cross contamination. Use of disposable pipettes or pipette tips is recommended.
- For optimal results, inspect all specimens for bubbles. Remove bubbles with an applicator stick before analysis. Use a new applicator stick for each specimen to prevent cross contamination.
- All samples (calibrators, controls, and patient specimens) should be tested within 3 hours of being placed on board the ARCHITECT *i* System.

Preparation for Analysis

- Follow the tube manufacturer's processing instructions for serum and plasma collection tubes. Gravity separation is not sufficient for specimen preparation.
- Mix thawed specimens thoroughly by low speed vortexing or by inverting 10 times. Visually inspect the specimens. If layering or stratification is observed, continue mixing until specimens are visibly homogeneous.
- To ensure consistency in results, specimens must be transferred to a centrifuge tube and centrifuged at $\geq 10,000$ RCF (Relative Centrifugal Force) for 10 minutes before testing if
 - they contain fibrin, red blood cells, or other particulate matter,
 - they require repeat testing, or
 - they were frozen and thawed.
- Transfer clarified specimen to a sample cup or secondary tube for testing.
- Centrifuged specimens with a lipid layer on the top must be transferred to a sample cup or secondary tube. Care must be taken to transfer only the clarified specimen without the lipemic material.

Storage

- Specimens may be stored on or off the clot, red blood cells or separator gel for up to 14 days refrigerated at 2-8°C.
- If testing will be delayed more than 14 days, remove serum or plasma from the clot, red blood cells, or separator gel. Specimens may be stored for up to 14 days refrigerated at 2-8°C prior to being tested. If testing will be delayed more than 14 days, store frozen (-10°C or colder).
- No qualitative performance differences were observed between experimental controls and nonreactive or reactive specimens subjected to 6 freeze/thaw cycles; however, multiple freeze/thaw cycles should be avoided.

Shipping

- Before shipping specimens, it is recommended that specimens be removed from the clot, red blood cells, or separator gel.
- When shipping specimens, package and label specimens in compliance with applicable state, federal, and international regulations covering the transport of clinical specimens and infectious substances.
- Specimens may be shipped on wet ice or dry ice. Do not exceed the storage time limitations listed above.

PROCEDURE

Materials Provided

- 6C15 ARCHITECT CMV IgG Reagent Kit

Materials Required but not Provided

- ARCHITECT *i* System
- ARCHITECT *i* System Assay CD-ROM
- 6C15-01 ARCHITECT CMV IgG Calibrators
- 6C15-10 ARCHITECT CMV IgG Controls
- ARCHITECT *i* **PRE-TRIGGER SOLUTION**
- ARCHITECT *i* **TRIGGER SOLUTION**
- ARCHITECT *i* **WASH BUFFER**
- ARCHITECT *i* **REACTION VESSELS**
- ARCHITECT *i* **SAMPLE CUPS**
- ARCHITECT *i* **SEPTUM**
- ARCHITECT *i* **REPLACEMENT CAPS**
- Pipettes or pipette tips (optional) to deliver the volumes specified in the protocol.

For information on materials required for maintenance procedures, refer to the ARCHITECT System Operations Manual, Section 9.

Assay Procedure

- Before loading the ARCHITECT CMV IgG Reagent Kit on the system for the first time, the microparticle bottle requires mixing to resuspend the microparticles that have settled during shipment. After the first time the microparticles have been loaded, no further mixing is required.
 - **Invert the microparticle bottle 30 times.**
 - Visually inspect the bottle to ensure microparticles are resuspended. If microparticles remain adhered to the bottle, continue inverting the bottle until the microparticles have been completely resuspended.
 - **If the microparticles do not resuspend, DO NOT USE. Contact your local Abbott representative.**
 - Once the microparticles have been resuspended, place a septum on the bottle. For instructions on placing septums on bottles, refer to the **Handling Precautions** section of this package insert.
- Load the ARCHITECT CMV IgG Reagent Kit on the ARCHITECT *i* System.
 - Verify that all necessary assay reagents are present.
 - Ensure that septums are present on all reagent bottles.
- Order calibration, if necessary.
 - For information on ordering calibrations, refer to the ARCHITECT System Operations Manual, Section 6.
- Order tests.
 - For information on ordering patient specimens and controls and for general operating procedures, refer to the ARCHITECT System Operations Manual, Section 5.
- The minimum sample cup volume is calculated by the system and is printed on the Orderlist report. No more than 10 replicates may be sampled from the same sample cup. To minimize the effects of evaporation, verify adequate sample cup volume is present before running the test.
 - Priority: 75 μ L for the first ARCHITECT CMV IgG test plus 25 μ L for each additional ARCHITECT CMV IgG test from the same sample cup.
 - ≤ 3 hours on board: 150 μ L for the first ARCHITECT CMV IgG test plus 25 μ L for each additional ARCHITECT CMV IgG test from the same sample cup.
 - > 3 hours on board: additional sample volume is required. For information on sample evaporation and volumes, refer to the ARCHITECT System Operations Manual, Section 5.
 - If using primary or aliquot tubes, use the sample gauge to ensure sufficient patient specimen is present.

- Prepare calibrators and controls.
 - Mix ARCHITECT CMV IgG Calibrators and Controls by gentle inversion before use.
 - To obtain the recommended volume requirements for the ARCHITECT CMV IgG Calibrators and Controls, hold the bottles **vertically** and dispense 4 drops of each calibrator or 4 drops of each control into each respective sample cup.
- Load samples.
 - For information on loading samples, refer to the ARCHITECT System Operations Manual, Section 5.
- Press RUN.
- For additional information on principles of operation, refer to the ARCHITECT System Operations Manual, Section 3.
- For optimal performance, it is important to perform routine maintenance as described in the ARCHITECT System Operations Manual, Section 9. When a laboratory requires more frequent maintenance, follow those procedures.

Specimen Dilution Procedures

Specimens with an anti-CMV IgG concentration of > 250.0 AU/mL will be flagged as "> 250.0 AU/mL" and may be diluted with the Automated Dilution Protocol:

- The system performs a 1:10 dilution of the specimen and automatically calculates the concentration of the specimen before dilution and reports the result.
- When testing is conducted using the "CMV IgG R" assay file, specimens flagged as "> 250.0 AU/mL" will be automatically retested in 1:10 dilution.
- For detailed information on ordering dilutions, refer to the ARCHITECT System Operations Manual, Section 5.

Calibration

- To perform an ARCHITECT CMV IgG calibration, test Calibrators A to F in replicates of two. A single sample of each ARCHITECT CMV IgG control level must be tested to evaluate the assay calibration. Ensure that assay control values are within the concentration ranges specified in the control package insert. Calibrators should be priority loaded.
- Calibration Range: 0 – 250.0 AU/mL
- Once an ARCHITECT CMV IgG calibration is accepted and stored, all subsequent samples may be tested without further calibration unless:
 - A reagent kit with a new lot number is used.
 - Controls are out of range.
- It is recommended that the assay be calibrated every 30 days.
- For detailed information on how to perform an assay calibration, refer to the ARCHITECT System Operations Manual, Section 6.

QUALITY CONTROL PROCEDURES

The recommended control requirement for the ARCHITECT CMV IgG assay is that a single sample of each control level be tested once every 24 hours each day of use. If laboratory quality control procedures require more frequent use of controls to verify test results, follow those procedures.

The ARCHITECT CMV IgG Control values must be within the acceptable ranges specified in the control package insert. If a control is out of its specified range, the associated test results are invalid and samples must be retested. Recalibration may be indicated.

Verification of Assay Claims

For protocols to verify package insert claims, refer to the ARCHITECT System Operations Manual, Appendix B. The ARCHITECT CMV IgG assay belongs to method group 5 (except functional sensitivity).

RESULTS

The ARCHITECT CMV IgG assay uses a 4 Parameter Logistic Curve fit (4PLC, Y-weighted) data reduction method to generate a calibration curve.

Calculation

The ARCHITECT *i* System calculates the Calibrator A through F mean chemiluminescent signal from two Calibrator A through F replicates, generates a calibration curve and stores the result.

The default result unit for the ARCHITECT CMV IgG assay is AU/mL.

Interpretation of Results

- Specimens with concentration values < 6.0 AU/mL are considered nonreactive for IgG antibodies to CMV. Individuals with such results are presumed to be not infected with CMV and susceptible to primary infection.
- Specimens with concentration values ≥ 6.0 AU/mL are considered reactive for IgG antibodies to CMV and indicate past or acute infection. Such individuals are potentially at risk of transmitting CMV infection, but are not necessarily currently contagious.
- **NOTE:** It is recommended to confirm results of specimens with concentration values between 6.0 AU/mL and 15.0 AU/mL using a CMV IgM test, or a second sample should be taken, if possible, within a reasonable period of time (*e.g.* two weeks) and used to repeat ARCHITECT CMV IgG testing.

Flags

- Some results may contain information in the Flags field. For a description of the flags that may appear in this field, refer to the ARCHITECT System Operations Manual, Section 5.

LIMITATIONS OF THE PROCEDURE

- If the ARCHITECT CMV IgG results are inconsistent with clinical evidence, additional testing is suggested to confirm the result.
- For diagnostic purposes, results should be used in conjunction with other data; *e.g.*, results of other tests (CMV IgM, CMV IgG Avidity), clinical impressions, etc.
- Heterophilic antibodies in human serum can react with reagent immunoglobulins, interfering with *in vitro* immunoassays.⁷ Patients routinely exposed to animals or to animal serum products can be prone to this interference and anomalous values may be observed. Additional information may be required for diagnosis.
- Specimens from patients who have received preparations of mouse monoclonal antibodies for diagnosis or therapy may contain human anti-mouse antibodies (HAMA)^{8,9} Specimens containing HAMA may produce anomalous values when tested with assay kits (such as ARCHITECT CMV IgG) that employ mouse monoclonal antibodies.⁸

SPECIFIC PERFORMANCE CHARACTERISTICS

Precision

The ARCHITECT CMV IgG assay is designed to have a precision of ≤ 10% total** CV for representative specimens within the ranges of 6 to 60 AU/mL and 200 to 250 AU/mL.

A study was performed with the ARCHITECT CMV IgG assay based on guidance from the Clinical and Laboratory Standards Institute. A 19 member panel (2 lots of Calibrators and Controls, 1 lot of Panel 1) was tested with 3 reagent lots at the internal site on 1 instrument and with 2 reagent lots at 2 external evaluation sites (diagnostic laboratory and blood bank) on 1 instrument each. Every panel was tested in replicates of 5 at 2 separate times per day for 5 days. Data from this study are summarized in the following tables.*

Sample	N	Within Run			Total **	
		Mean RLU	RLU SD	RLU %CV	RLU SD	RLU %CV
Calibrator A	700	512	94.7	18.5	94.7	18.5
Calibrator B	700	7684	296.9	3.9	319.2	4.2
Calibrator C	700	36985	1400.3	3.8	1483.5	4.0
Calibrator D	700	51431	1920.0	3.7	2046.3	4.0
Calibrator E	700	74796	2646.1	3.5	2832.5	3.8
Calibrator F	700	149831	5095.2	3.4	5518.4	3.7

Sample	N	Within Run			Total **	
		Mean AU/mL	AU/mL SD	AU/mL %CV	AU/mL SD	AU/mL %CV
NC	2100	0.2	0.36	N/A***	0.36	N/A***
PC 1	2100	29.9	1.69	5.67	1.84	6.17
PC 2	2100	154.4	8.69	5.63	9.20	5.96
Panel 1	1050	214.8	9.43	4.39	10.46	4.87

* Representative data; results in individual laboratories may vary from these data.

** Total is an accumulation of within run, between run and between day.

***N/A = Not Applicable.

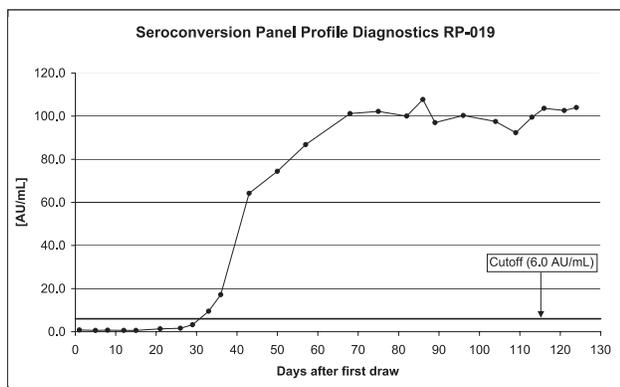
Seroconversion Sensitivity

The ARCHITECT CMV IgG assay is designed to show a comparable seroconversion sensitivity to AxSYM CMV IgG. Three commercially available seroconversion panels were obtained and tested. The following table shows data from one seroconversion panel.*

Panel	Day after 1 st draw	ARCHITECT CMV IgG	AxSYM CMV IgG
		(AU/mL) Cutoff: 6.0 AU/mL	(AU/mL) Cutoff: 15.0 AU/mL
BBI PTC901	0	3.4 (nonreactive)	2.2 (negative)
	2	2.2 (nonreactive)	1.8 (negative)
	7	2.5 (nonreactive)	1.7 (negative)
	10	1.7 (nonreactive)	1.8 (negative)
	17	4.9 (nonreactive)	8.3 (negative)
	24	29.9 (reactive)	60.3 (positive)
	32	50.2 (reactive)	97.7 (positive)
	51	76.4 (reactive)	137.9 (positive)
	67	91.9 (reactive)	153.7 (positive)

* Representative data; results in individual laboratories may vary from these data.

During an acute infection, the ARCHITECT CMV IgG assay typically shows a substantial rise in anti-CMV IgG concentrations in consecutive draws, as demonstrated by the following graph.*



* Representative performance data of seroconversion panel RP-019 are shown; results obtained in individual laboratories may vary from these data.

However, in order to identify a primary infection, testing for CMV IgM and CMV IgG Avidity is highly recommended.

Relative Agreement

The ARCHITECT CMV IgG assay is designed to show a relative agreement to AxSYM CMV IgG of 98% or greater. The presence of IgG antibody to Cytomegalovirus in the 1506 specimens was determined by 3 laboratories using the ARCHITECT CMV IgG assay (internal site, diagnostic laboratory, blood bank). In addition, each specimen was tested using the ABBOTT AxSYM CMV IgG assay. 12 specimens yielded discordant results between AxSYM and ARCHITECT. Data for relative agreement are summarized in the following table.*

Sample Type	Relative Agreement	Lower 95% Confidence Limit
Blood Donors	99.33% (742/747)	98.44%
Pregnant Women	100.00% (259/259)	98.59%
Diagnostic/Hospital Patients	99.00% (396/400)	97.46%
Transplant Recipients	97.00% (97/100)	91.48%
Total	99.20% (1494/1506)	98.61%

* Representative data; results in individual laboratories may vary from these data.

Resolved Relative Sensitivity and Specificity

Further evaluation of the 12 discordant specimens (10 reactive, 2 nonreactive on ARCHITECT CMV IgG) was performed using 2 additional commercially available assays. Of the 10 specimens tested reactive by the ARCHITECT CMV IgG assay, 8 were nonreactive after resolution testing. Of the 2 specimens tested nonreactive by the ARCHITECT CMV IgG assay, both were nonreactive after resolution testing. Data for resolved relative sensitivity and specificity are summarized in the following table.*

Sample Type	Resolved Relative Sensitivity		Resolved Relative Specificity	
	Observed	Lower 95% Confidence Limit	Observed	Lower 95% Confidence Limit
Blood Donors	100.00% (167/167)	97.82%	99.14% (575/580)	98.00%
Pregnant Women	100.00% (156/156)	97.66%	100.00% (103/103)	96.48%
Diagnostic/Hospital Patients	100.00% (193/193)	98.11%	98.55% (204/207)	95.82%
Transplant Recipients	100.00% (44/44)	91.96%	100.00% (56/56)	93.62%
Total	100.00% (560/560)	99.34%	99.15% (938/946)	98.34%

* Representative data; results in individual laboratories may vary from these data.

Interference

No interference was observed between experimental controls and nonreactive or reactive specimens tested with elevated levels of bilirubin (20 mg/dL), triglycerides (3000 mg/dL), protein (4.5 - 12 g/dL), red blood cells (0.4% v/v), or hemoglobin (500 mg/dL).

The interference of the ARCHITECT CMV IgG assay was further evaluated by testing 130 specimens positive for anti-nuclear antibody, systemic lupus erythematosus, rheumatoid factor, herpes simplex virus types 1 and 2, Epstein-Barr virus, measles, parvovirus B19, varicella zoster virus, hyperpolyclonal IgM, hyperpolyclonal IgG, human anti-mouse antibody, or influenza vaccine recipients. With these specimens, ARCHITECT CMV IgG and AxSYM CMV IgG showed 98.46% agreement (128/130) (lower 95% confidence limit: 94.55%).

BIBLIOGRAPHY

1. Munro SC, Hall B, Whybin LR, Leader L, Robertson P, Maine GT, Rawlinson WD. Diagnosis of and screening for cytomegalovirus infection in pregnant women. *J Clin Microbiol.* 2005 Sep;43(9): 4713-4718.
2. Cannon MJ, Davis KF. Washing our hands of the congenital cytomegalovirus disease epidemic BMC Public Health. 2005 Jun 20;5:70.
3. Pass R, Griffiths C, August A. Antibody Response to Cytomegalovirus after Renal Transplantation: Comparison of Patients with Primary and Recurrent Infections. *J Infect Dis* 1983;147:40-46.
4. Hecker M, Qui D, Marquardt K, Bein G, Hackstein H. Continuous cytomegalovirus seroconversion in a large group of healthy blood donors. *Vox Sang.* 2004 Jan;86(1):41-44.
5. Bowden R, Sayers M, Flournoy N, Newton R, Banaji M, Thomas E, *et al.* Cytomegalovirus Immune Globulin and Seronegative Blood Products to Prevent Primary Cytomegalovirus Infection After Bone Marrow Transplantation. *N Engl J Med* 1986;314(16):1006-1010.
6. Lazzarotto T, Gabrielli L, Lanari M, Guerra B, Bellucci T, Sassi M, Landini MP. Congenital cytomegalovirus infection: recent advances in the diagnosis of maternal infection. *Hum Immunol.* 2004 May;65(5):410-415.
7. Boscato, LM and Stuart, MC. Heterophilic antibodies: A problem for all immunoassays. *Clin Chem* 1988;34(1):27-33.
8. Primus FJ, Kelley EA, Hansen HJ, *et al.* "sandwich"-type immunoassay of carcinoembryonic antigen in patients receiving murine monoclonal antibodies for diagnosis and therapy. *Clin Chem* 1988;34(2):261-264.
9. Schroff RW, Foon KA, Beatty SM, *et al.* Human anti-murine immunoglobulin responses in patients receiving monoclonal antibody therapy. *Cancer Res* 1985;45(2):879-885.

The following US Patents are relevant to the ARCHITECT *i* System or its components. There are other such patents and patent applications in the United States and worldwide.

5 468 646	5 543 524	5 545 739
5 565 570	5 669 819	5 783 699

ARCHITECT, Chemiflex and AxSYM are a trademarks of Abbott Laboratories in various jurisdictions.

ProClin is property of its respective owner.

 Abbott Ireland
Diagnostics Division
Finisklin Business Park
Sligo
Ireland
+353-71-9171712



December 2008

© 2007, 2008 Abbott Laboratories