



**CMV IgM Rapid Test Cassette  
(Whole Blood/Serum/Plasma)  
Package Insert**

REF ICM-402e English

A rapid test for the qualitative detection of IgM antibody to CMV in human whole blood, serum or plasma.

For professional *in vitro* diagnostic use only.

**[INTENDED USE]**

The CMV IgM Rapid Test Cassette is a lateral flow chromatographic immunoassay for the qualitative detection of IgM antibody to CMV in whole blood, serum or plasma to aid in the diagnosis of CMV infection.

**[SUMMARY]**

Cytomegalovirus is a herpes virus. It is a leading etiological agent for congenital abnormalities and complications among those who receive massive blood transfusions and immunosuppressive therapy. About half of pregnant women who contract a primary infection spread the disease to their fetus. 1,2,3 Infection during pregnancy may cause mental retardation, blindness, and/or deafness of the fetus.

The detection of anti-CMV IgM antibody enables effective diagnosis of acute or recent CMV infection. The CMV IgM Rapid Test Cassette (Whole Blood/Serum/Plasma) is a rapid chromatographic immunoassay for the qualitative detection of IgM antibody to CMV in whole blood, serum or plasma specimens.

**[PRINCIPLE]**

The CMV IgM Rapid Test Cassette (Whole Blood/Serum/Plasma) is a qualitative, lateral flow immunoassay for the detection of IgM antibody to CMV in whole blood, serum or plasma specimens. In this test, CMV Antigen is coated in the test line regions of the test. During testing, the whole blood, serum or plasma specimen reacts with goat anti-human IgM coated particles in the test strip. The mixture then migrates forward on the membrane by capillary action and reacts with the CMV Antigen on the membrane in the test line region respectively. The presence of a colored line in the test line region indicates a positive result for CMV infection, while its absence indicates a negative result for that infection.

To serve as a procedural control, a colored line will always appear in the control line region of the strip indicating that proper volume of specimen has been added and membrane wicking has occurred.

**[REAGENTS]**

The test contains goat anti-human IgM and CMV antigen. A Streptavidin-rabbit IgM is employed in the control line system.

**[PRECAUTIONS]**

1. For *in vitro* diagnostic use only. Do not use after the expiration date.
2. Do not smoke, drink, or eat in areas where specimens or kits reagents are handled.
3. Wear protective clothing such as laboratory coats, disposable gloves and eye protection when specimens are being tested.
4. Humidity and temperature can adversely affect results.
5. The used test should be discarded according to local regulations.

**[STORAGE AND STABILITY]**

Store as packaged in the sealed pouch at room temperature or refrigerated (2-30°C). The test is stable through the expiration date printed on the sealed pouch. The test must remain in the sealed pouch until use. **DO NOT FREEZE.** Do not use beyond the expiration date.

**[SPECIMEN COLLECTION AND PREPARATION]**

- The CMV IgM Rapid Test Cassette (Whole Blood/Serum/Plasma) can be performed using whole blood.
- Both Fingerstick Whole Blood and Venipuncture Whole Blood can be used.
- To collect **Fingerstick Whole Blood specimens:**
  - Wash the patient's hand with soap and warm water or clean with an alcohol swab. Allow to dry.
  - Massage the hand without touching the puncture site by rubbing down the hand towards the fingertip of the middle or ring finger
  - Puncture the skin with a sterile lancet. Wipe away the first sign of blood.
  - Gently rub the hand from wrist to palm to finger to form a rounded drop of blood over the puncture site.
- Testing should be performed immediately after specimen collection. Do not leave the specimens at room temperature for prolonged periods. Whole blood collected by venipuncture should be stored at 2-8°C if the test is to be run within 2 days of collection. For long term storage, specimens should be kept below -20°C. Whole blood collected by fingerstick should be tested immediately.
- Bring specimens to room temperature prior to testing. Frozen specimens must be completely thawed and mixed well prior to testing. Specimens should not be frozen and thawed repeatedly for more than three times.
- If specimens are to be shipped, they should be packed in compliance with federal regulations covering the transportation of etiologic agents.

**[MATERIALS]**

**Materials Provided**

- Test Cassettes
- Buffer
- Sample Droppers
- Package Inserts

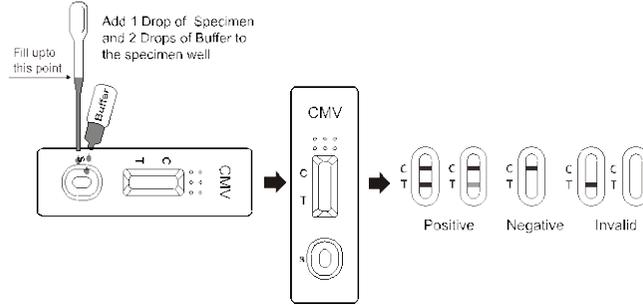
**Materials Required But Not Provided**

- Specimen Collection Containers
- Centrifuge (For plasma only)
- Timer

**[DIRECTIONS FOR USE]**

Allow the test, specimen, buffer and/or controls to reach room temperature (15-30°C) prior to testing.

1. Remove the test cassette from sealed pouch and use it within one hour. Best results will be obtained if the assay is performed immediately after opening foil pouch.
2. Place the test cassette on a clean and level surface. Hold the dropper vertically; draw the specimen about **1cm above** the upper end of the nozzle as shown in illustration below. Transfer 1 full drop (approx. 20µL) of specimen to each sample well, then add 2 drops of buffer (approximately 80µL) to each sample well and start the timer. See the illustration below.
3. Wait for the colored line(s) to appear. The result should be read at 15 minutes. Do not interpret results after 20 minutes.



**[INTERPRETATION OF RESULTS]**

(Please refer to the illustration above)

**POSITIVE:** Two colored lines appear. One colored line should always appear in the control line region (C) and another line should be in the test line region.

**\*NOTE:** The intensity of the color in the test line regions may vary depending on the concentration of CMV antibody present in the specimen. Therefore, any shade of color in the test line region should be considered positive.

**NEGATIVE:** One colored line appears in the control line region (C). No line appears in the test line regions.

**INVALID:** Control line fails to appear. Insufficient specimen volume or incorrect procedural techniques are the most likely reasons for control line failure. Review the procedure and repeat the test with a new test. If the problem persists, discontinue using the test kit immediately and contact your local distributor.

**[QUALITY CONTROL]**

Internal procedural controls are included in the test individually for both two sections. Two colored lines appearing in control line regions (C) for both two sections is the internal procedural control. It confirms sufficient specimen volume and correct procedural technique.

Control standards are not supplied with this kit; however, it is recommended that positive and negative controls be tested as a good laboratory practice to confirm the test procedure and to verify proper test performance.

**[LIMITATIONS]**

1. The CMV IgM Rapid Test Cassette (Whole Blood/Serum/Plasma) is for *in vitro* diagnostic use only. This test should be used for detection of IgM antibody to CMV in whole blood, serum or plasma specimens. Neither the quantitative value nor the rate of increase in the concentration of IgM antibody to CMV can be determined by this qualitative test.
2. The CMV IgM Rapid Test Cassette (Whole Blood/Serum/Plasma) will only indicate the presence of IgM antibody to CMV in the specimen and should not be used as the sole criteria for the diagnosis of CMV infections.
3. As with all diagnostic tests, all results must be considered with other clinical information available to the physician.
4. If the test result is negative and clinical symptoms persist, additional follow-up testing using other clinical methods is suggested. A negative result at any time does not preclude the possibility of CMV infection.

**[EXPECTED VALUES]**

The CMV IgM Rapid Test Cassette (Whole Blood/Serum/Plasma) has been compared with leading commercial EIA CMV tests. The correlation between these two systems is 98.1%.

**[PERFORMANCE CHARACTERISTICS]**

**Sensitivity and Specificity**

The CMV IgM Rapid Test Cassette (Whole Blood/Serum/Plasma) was compared with leading commercial EIA CMV tests; the results show that CMV IgM Rapid Test Cassette (Whole Blood/Serum/Plasma) has a high sensitivity and specificity.

Method	CMV EIA (IgM)		Total Results
	Results	Positive	
CMV IgM Rapid Test Cassette	Positive	36	40
	Negative	3	311

Total Results	39	332	371
Relative Sensitivity: 92.3% (95%CI*: 79.1%-98.4%)			
Relative Specificity: 98.8% (95%CI*: 96.9%-99.7%)			
Accuracy: 98.1% (95%CI*: 96.2%-99.2%)			*Confidence Interval

**Precision  
Intra-Assay**

Within-run precision has been determined by using 10 replicates of three specimens: a negative, a low positive, and a high positive. The negative, low positive, and high positive values were correctly identified >99% of the time.

**Inter-Assay**

Between-run precision has been determined by 10 independent assays on the same three specimens: a negative, a low positive, and a high positive. Three different lots of the CMV IgM Rapid Test cassette (Whole Blood/Serum/Plasma) have been tested over a 10-days period using negative, low positive, and high positive specimens. The specimens were correctly identified >99% of the time.

**Cross-Reactivity**

The CMV IgM Rapid Test Cassette (Whole Blood/Serum/Plasma) has been tested for HAV, HBV, HCV, HIV, RF, Syphilis, *H. Pylori*, Rubella, TOXO, HSV 1/2 positive specimens. The results showed no cross-reactivity.

**Interfering Substances**

The following compounds have also been tested using the CMV IgM Rapid Test Cassette (Whole Blood/Serum/Plasma) and no interference was observed.

Acetaminophen: 20mg/dl	Caffeine: 20mg/dl	EDTA: 20mg/dl
Acetylsalicylic Acid: 20mg/dl	Gentisic Acid: 20mg/dl	Ethanol: 10%
Ascorbic Acid: 2g/dl	Phenylpropanolamine: 20mg/dl	Glucose: 20mg/dl
Bilirubin: 1000mg/dL	Salicylic Acid: 20mg/dl	Phenothiazine: 20mg/dl

**[BIBLIOGRAPHY]**

1. Starr, S.E. and H.M. Friedman. "Human CMV." Chapter 65. In Manual of Clin. Microbiol., 4th ed., Lennett, E.H. et al ed. Am. Soc. Microbiol. pp. 771-719, 198
2. Jor MC: Latent infection and the elusive cytomegalovirus. Rev. Infect. Dis. 5:205-215, 1983.
3. Starr SE" cytomegalovirus. Ped. Clin. N. Am. 26:282-293, 1979.

**Index of Symbols**

	Attention, see instructions for use		Tests per kit		Do not reuse
	For in vitro diagnostic use only		Use by		Catalog #
	Store between 2-30°C		Lot Number		

Hangzhou AllTest Biotech Co., Ltd.  
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Number: 145446501  
Effective date: 2017-02-10