anti-CMV Blend (8B1.2, 1G5.2 & 2D4.2)
Mouse Monoclonal Primary Antibody

PRODUCT AVAILABILITY

<table>
<thead>
<tr>
<th>Ventana Cat. No.</th>
<th>Roche Cat No</th>
<th>Description</th>
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<tbody>
<tr>
<td>760-4703</td>
<td>06597190001</td>
<td>50 test dispenser</td>
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SYMBOL DEFINITIONS

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
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<tbody>
<tr>
<td>A</td>
<td>ascites</td>
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<tr>
<td>E</td>
<td>serum</td>
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<tr>
<td>S</td>
<td>supernatant</td>
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APPLICATION

This product is intended for research use only. Not for use in diagnostic procedures.

Anti-CMV (8B1.2, 1G5.2 & 2D4.2) may be used as the primary antibody for immunohistochemical staining of formalin-fixed, paraffin-embedded tissue sections.

Human cytomegalovirus (CMV) is a β-herpesvirus (human herpesvirus 5) that causes widespread persistent infection. CMV continues to be an important opportunistic pathogen in immunocompromised patients. It is estimated that 30% of transplant recipients experience CMV disease. The range of organ involvement in post-transplant CMV disease is wide; hepatitis occurs in 40% of liver transplant recipients; and pneumonitis is more frequently seen in heart and heart-lung transplant patients. Other organs that are commonly affected are the gastrointestinal tract and the peripheral and central nervous systems. Histologic diagnosis of CMV in fixed tissues usually rests on identifying characteristic cytopathic effects including intranuclear inclusions, cytoplasmic inclusions, or both, especially in the endothelial cells. However, histologic examination lacks sensitivity, and in some cases atypical cytopathic features can be confused with reactive or degenerative changes. Additionally, up to 38% of patients with gastrointestinal CMV disease fail to demonstrate any inclusions. In these cases, IHC using monoclonal antibodies against early and late CMV antigens allows the detection of CMV antigens in the nucleus and cytoplasm of infected cells. In addition, IHC may allow detection of CMV antigens early in the course of the disease when cytopathic changes have not yet developed. Various CMV antigens can serve as IHC targets for the detection of CMV infection. During productive, lytic CMV infection, the viral genes, encoding these antigens, are expressed in a coordinated and temporal fashion. The first viral genes expressed at 3-12 hours post-infection are the immediate-early (IE) genes, which control viral and cellular gene expression to optimize the host environment for the production of viral DNA. IE gene expression is followed by viral early (E) gene transcription, or delayed early or intermediate early genes, usually expressed at 12-24 hours post-infection. The E genes encode for proteins that are involved in viral DNA replication. Finally, E gene expression is followed by the transcription of viral late genes. The late genes encode for virus structural proteins.

The sensitivity of IHC for detecting CMV infection ranges from 78% to 93%. The sensitivity of IHC is better than light microscopic identification of viral inclusions and compares favorably with culture and in situ hybridization. Additionally, immunohistochemical assays can be completed faster than the shell vial culture technique, allowing for rapid results that are important for early anti-CMV therapy. Immunohistochemistry has been used to detect CMV infection in patients with steroid refractory ulcerative colitis, and the routine use of IHC for the detection of CMV in the evaluation of these patients is now recommended. CMV immunostaining has been used to detect occult CMV infection of the central nervous system in liver transplant patients who develop neurologic complications. It has also been used to demonstrate a high frequency of CMV antigens in tissues from first-trimester abortions.

MATERIALS

Reagents Provided
One dispenser of CMV (8B1.2, 1G5.2 & 2D4.2) primary antibody contains sufficient prediluted reagent for 50 tests. The antibody is diluted in Tris Buffer, pH 7.3-7.7, with 1% BSA and <0.1% Sodium Azide.

The immunoglobulin concentration range for this product is 0.01-1.0 µg/ml.

The immunoglobulin concentration of the reagent appears on the product label.

Isotype: IgG2a

See product label for antibody source details.
Storage and Handling
Store at 2-8°C. Do not freeze.

To ensure proper reagent delivery and stability of the antibody after every run, the cap must be replaced and the dispenser must be immediately placed in the refrigerator in an upright position.

Every antibody dispenser is expiration dated. When properly stored, the reagent is stable to the date indicated on the label. Do not use reagent beyond the expiration date for the prescribed storage method.

Contact Cell Marque customer service if there is a suspected indication of reagent instability.

WARNINGS AND PRECAUTIONS

1. This product is for research use only.
2. Take reasonable precautions when handling reagents. Use disposable gloves and lab coats when handling suspected carcinogens or toxic materials (example: xylene).
3. Avoid contact of reagents with eyes and mucous membranes. If reagents come in contact with sensitive areas, wash with copious amounts of water.
4. Avoid microbial contamination of reagents, as this could produce incorrect results.
5. The predilute has been diluted, and further dilution may result in loss of antigen staining.
6. When used according to instructions, this product is not classified as a hazardous substance. The preservative in the reagent is less than 0.1% sodium azide and does not meet the OSHA (USA) criteria for hazardous substance at the stated concentration. See MSDS.
7. The user must validate any storage conditions other than those specified in the package insert.
8. Diluent may contain bovine serum albumin and supernatant may contain bovine serum. The products containing fetal bovine serum and products containing bovine serum albumin are purchased from commercial suppliers. Certificates of Origin for the animal source used in these products are on file at Cell Marque. The certificates support that the bovine sources are from countries with negligible BSE risk and state sources of bovine from USA and Canada.
9. As with any product derived from biological sources, proper handling procedures should be used.

DISPENSER INSTRUCTIONS

Step by Step Procedure
Cell Marque’s primary antibodies have been developed for use on Ventana Roche automated slide stainers in combination with Ventana Roche detection kits and accessories.

Dispenser Preparation, Handling & Storage Instructions
Preparing For Use:
Where Used: For NexES® IHC, BenchMark® Series and Discovery® automated instruments, software version 8.0 and higher.

1. Shipping Key Removal
   To remove the Shipping Key (shown in Figure A), remove the Nozzle Cap, hold the dispenser upright and pull the Key Tab to disengage it from each end. DO NOT cover the nozzle tip as it could permanently damage the dispenser. DO NOT depress the dispenser while removing the key as it could waste reagent. Discard the shipping key.

2. Preparing the Dispenser for Use
   Remove the Nozzle Cap and place on the Nozzle Cap Holder. Fluid may be present inside the Nozzle Cap. Install the dispenser on the reagent carousel. The Inline Dispenser has been designed to be “Prepared for Use” by the NexES® software Version 8.0 or higher. Before each run, the software will detect a new dispenser on the carousel and prime it automatically. Manually priming the dispenser is not necessary and should NEVER be done as it could waste reagent and decrease the number of available dispenses.

   Note - All earlier software installations: After removing the shipping key, remove the nozzle cap and CHARGE THE DISPENSER BY RAPIDLY PUMPING 3 to 4 TIMES, keeping the dispenser in an upright position. Charging is only necessary prior to first time use. (See Inspect Prime Before Use section.)

3. Dispenser Storage & Handling
   To insure reliable operation, the dispenser must always be capped when not in use and should NEVER be manually dispensed. (See the Do’s and Don’ts section.)

Do’s and Don’ts
DO:
1. Check priming chamber and meniscus before each use. (See Inspect Prime Before Use below).
2. Store nozzle cap on dispenser. A holder is provided.
3. Cap dispenser when not in use to prevent evaporation. Dispensers mounted on the reagent tray can be capped (from underneath the tray) when not in use.
4. Store dispensers in an upright position in a rack and on the reagent carousel.
5. When mounting the dispenser on the carousel, grasp the coupler to avoid accidental manual dispensing.

DON’T:
1. Do not manually dispense when inverted (upside down). Prime will be lost and may be impossible to restore.
2. Do not manually dispense with the nozzle cap in place. This can permanently damage the dispenser.
3. Do not manually dispense or prime prior to each use. This is not necessary and wastes reagent.
4. Do not hold the barrel in the down position. Fluid can leak from the dispenser when the barrel is depressed.
5. Do not stack carousels with dispensers installed. This can cause the dispensers to leak.
Inspect Prime Before Use:

Remove the nozzle cap and refer to Figure B.

Dispenser is ready for use when:

1. A meniscus is present in the area shown in Figure B.
2. The priming chamber contains liquid.

REFERENCES