SANTA CRUZ BIOTECHNOLOGY, INC.

CMV pp86 (12E2): sc-69835

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The Power to Question

BACKGROUND

Cytomegalovirus (CMV) is a member of the herpes virus group which includes herpes simplex virus types 1 and 2; Varicella Zoster Virus, which causes chicken pox; and Epstein Barr virus, which causes infectious mononucleosis. These viruses remain dormant within the body over a long period. In humans, CMV is known as HCMV or human herpesvirus 5 (HHV-5). HHV-5 causes only a brief mononeucleosis-like malaise in immunocompetent adults, but may cause severe illness or death in immunosuppressed individuals. CMV immediate early (CMV IE) proteins are present during active CMV infection and they activate the extracellular matrix proteins Thrombospondin 1 and Thrombospondin 2. The CMV IE protein CMV pp86, also known as UL122, IE2 or IE86, interacts with another CMV IE protein CMV pp72 to stimulate the expression of HLA-G, a non-classical MHC class 1 molecule, during viral infection. The CMV IE promoter is activated by the inflammatory process proteins: tumor necrosis factor (TNFα), interleukin 1β (IL-1β), and interleukin 4 (IL-4).

REFERENCES

1. Boppana, S.B., et al. 1992. Evaluation of a microtiter plate fluorescent-antibody assay for rapid detection of human Cytomegalovirus infection. J. Clin. Microbiol. 30: 721-723.
2. Onno, M., et al. 2000. Modulation of HLA-G antigens expression by human Cytomegalovirus: specific induction in activated macrophages harboring human Cytomegalovirus infection. J. Immunol. 164: 6426-6434.

SOURCE

CMV pp86 (12E2) is a mouse monoclonal antibody raised against recombinant partial length pp86 of CMV origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CMV pp86 (12E2) is available conjugated to agarose (sc-69835 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-69835 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-69835 PE), fluorescein (sc-69835 FITC), Alexa Fluor® 488 (sc-69835 AF488), Alexa Fluor® 546 (sc-69835 AF546), Alexa Fluor® 594 (sc-69835 AF594) or Alexa Fluor® 647 (sc-69835 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-69835 AF680) or Alexa Fluor® 790 (sc-69835 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

CMV pp86 (12E2) is recommended for detection of pp86 of CMV origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of CMV pp86: 86 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Du, G. and Stinski, M.F. 2013. Interaction network of proteins associated with human Cytomegalovirus IE2-p86 protein during infection: a proteomic analysis. PLoS ONE 8: e81583.
2. Heilingloh, C.S., et al. 2017. The major immediate-early protein IE2 of human Cytomegalovirus is sufficient to induce proteasomal degradation of CD83 on mature dendritic cells. Front. Microbiol. 8: 119.
3. Liao, H., et al. 2017. Human Cytomegalovirus downregulates SLITRK6 expression through IE2. J. Neurovirol. 23: 79-86.
4. Grosche, L., et al. 2017. Human Cytomegalovirus-induced degradation of CYTIP modulates dendritic cell adhesion and migration. Front. Immunol. 8: 461.
5. Lin, Y.T., et al. 2017. The host ubiquitin-dependent segregase VCP/p97 is required for the onset of human Cytomegalovirus replication. PLoS Pathog. 13: e1006329.
6. Kim, J.E., et al. 2017. Human Cytomegalovirus IE2 86 kDa protein induces STING degradation and inhibits cGAMP-mediated IFN-β induction. Front. Microbiol. 8: 1854.
7. Lin, Y.T., et al. 2020. Human Cytomegalovirus evades ZAP detection by suppressing CpG dinucleotides in the major immediate early 1 gene. PLoS Pathog. 16: e1008844.
8. Stecher, C., et al. 2021. Protein phosphatase 1 regulates human Cytomegalovirus protein translation by restraining AMPK signaling. Front. Microbiol. 12: 698603.
9. Stecher, C., et al. 2022. Human Cytomegalovirus induces vitamin-D resistance *in vitro* by dysregulating the transcriptional repressor snail. Viruses 14: 2004.
10. Merchut-Maya, J.M., et al. 2022. Human Cytomegalovirus hijacks host stress response fueling replication stress and genome instability. Cell Death Differ. 29: 1639-1653.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.