

# CMV pp28 (CH19): sc-69749

## 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 mononucleosis-like malaise in immunocompetent adults, but may cause severe illness or death in immunosuppressed individuals. CMV pp28 is a myristylated CMV phosphoprotein encoded by the UL99 gene that is essential for production of infectious virions. The CMV pp28 protein is located within the tegument of the virus, a protein structure that is positioned between the capsid and envelope. Specifically, intracellular localization of CMV pp28 is required for virus assembly.

## REFERENCES

- Alford, C.A., et al. 1990. Congenital and perinatal Cytomegalovirus infections. *Rev. Infect. Dis.* 12: S745-S753.
- Rubin, R.H. 1990. Impact of Cytomegalovirus infection on organ transplant recipients. *Rev. Infect. Dis.* 12: S754-S766.
- Toome, B.K., et al. 1991. Diagnosis of cutaneous Cytomegalovirus infection: a review and report of a case. *J. Am. Acad. Dermatol.* 24: 860-867.
- Boeckh, M. and Boivin, G. 1998. Quantitation of Cytomegalovirus: methodologic aspects and clinical applications. *Clin. Microbiol. Rev.* 11: 533-554.
- Borchers, A.T., et al. 1999. Role of Cytomegalovirus infection in mechanisms. *Transpl. Immunol.* 7: 75-82.
- Gaytant, M.A., et al. 2002. Congenital Cytomegalovirus infection: review of the epidemiology and outcome. *Obstet. Gynecol. Surv.* 57: 245-256.
- Britt, W.J., et al. 2003. Rapid genetic linear recombination system: demonstration that pp28 (UL99) is essential for pro virus. *J. Virol.* 78: 539-543.
- Fletcher, J.M., et al. 2005. Cytomegalovirus-specific CD4<sup>+</sup> T cells in healthy carriers are continuously driven to replicative exhaustion. *J. Immunol.* 175: 8218-8225.
- Munger, J., et al. 2006. UL26-deficient human Cytomegalovirus produces virions with hypophosphorylated pp28 tegument protein that is unstable within newly infected cells. *J. Virol.* 80: 3541-3548.

## SOURCE

CMV pp28 (CH19) is a mouse monoclonal antibody raised against CMV.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

CMV pp28 (CH19) is recommended for detection of pp28 of CMV origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of CMV pp28: 28 kDa.

## SELECT PRODUCT CITATIONS

- Zydek, M., et al. 2010. Cyclin-dependent kinase activity controls the onset of the HCMV lytic cycle. *PLoS Pathog.* 6: e1001096.
- Montag, C., et al. 2011. The latency-associated UL138 gene product of human Cytomegalovirus sensitizes cells to tumor necrosis factor  $\alpha$  (TNF- $\alpha$ ) signaling by upregulating TNF- $\alpha$  receptor 1 cell surface expression. *J. Virol.* 85: 11409-11421.
- Oduro, J.D., et al. 2012. Inhibition of human Cytomegalovirus immediate-early gene expression by cyclin A2-dependent kinase activity. *J. Virol.* 86: 9369-9383.
- Mouna, L., et al. 2016. Analysis of the role of autophagy inhibition by two complementary human Cytomegalovirus BECN1/Beclin 1-binding proteins. *Autophagy* 12: 327-342.
- Weisbach, H., et al. 2017. Synthetic lethal mutations in the cyclin A interface of human Cytomegalovirus. *PLoS Pathog.* 13: e1006193.
- 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.
- Dietz, A.N., et al. 2017. A tyrosine-based trafficking motif of the tegument protein pUL71 is crucial for human Cytomegalovirus secondary envelopment. *J. Virol.* 92: e00907-17.
- McCormick, D., et al. 2018. Identification of host factors involved in human Cytomegalovirus replication, assembly, and egress using a two-step small interfering RNA screen. *mBio* 9: e00716-18.
- Taisne, C., et al. 2019. Human Cytomegalovirus hijacks the autophagic machinery and LC3 homologs in order to optimize cytoplasmic envelopment of mature infectious particles. *Sci. Rep.* 9: 4560.
- van Senten, J.R., et al. 2019. The human Cytomegalovirus-encoded G protein-coupled receptor UL33 exhibits oncomodulatory properties. *J. Biol. Chem.* 294: 16297-16308.
- Lee, C.H., et al. 2019. Asparagine deprivation causes a reversible inhibition of human Cytomegalovirus acute virus replication. *mBio* 10: e01651-19.
- van Senten, J.R., et al. 2020. Human Cytomegalovirus-encoded G protein-coupled receptor UL33 facilitates virus dissemination via the extracellular and cell-to-cell route. *Viruses* 12: 594.
- 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.

## RESEARCH USE

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