

MCPyV large T-antigen (CM2B4): sc-136172

BACKGROUND

Merkel cells are round neuroendocrine cells found in skin that have synaptic contacts with somatosensory afferents. Responsible for touch and pressure sensation, Merkel cells can turn malignant and form a rare but aggressive form of skin cancer known as Merkel cell carcinoma (MCC). Approximately 80% of MCC are caused by a newly-described polyomavirus called Merkel cell polyomavirus, also known as MCPyV or MCV, that expresses a large T antigen in tumor cells. Full-length MCPyV large T antigen is a 125 kDa nuclear protein but MCPyV T antigens obtained from tumors have natural truncating mutations resulting in variably-sized, smaller proteins. MCPyV large T-antigen (CM2B4) was raised against a peptide in exon 2 of the T antigen locus and is highly specific for MCPyV large T and 57kT isoforms but will not detect MCPyV small T antigen. While human MCPyV infection is widespread, MCPyV large T antigen is a specific marker for Merkel cell tumors.

REFERENCES

- Feng, H., et al. 2008. Clonal integration of a polyomavirus in human Merkel cell carcinoma. *Science* 319: 1096-1100.
- Shuda, M., et al. 2008. T antigen mutations are a human tumor-specific signature for Merkel cell polyomavirus. *Proc. Natl. Acad. Sci. USA* 105: 16272-16277.

SOURCE

MCPyV large T-antigen (CM2B4) is a mouse monoclonal antibody raised against large T/57kT exon 2 peptides of Merkel cell polyomavirus.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MCPyV large T-antigen (CM2B4) is available conjugated to agarose (sc-136172 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-136172 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-136172 PE), fluorescein (sc-136172 FITC), Alexa Fluor® 488 (sc-136172 AF488), Alexa Fluor® 546 (sc-136172 AF546), Alexa Fluor® 594 (sc-136172 AF594) or Alexa Fluor® 647 (sc-136172 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-136172 AF680) or Alexa Fluor® 790 (sc-136172 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MCPyV large T-antigen (CM2B4) is recommended for detection of Merkel Cell Polyomavirus large T antigen of Merkel cell polyomavirus 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of MCPyV large T-antigen wild-type/full length: 125 kDa.

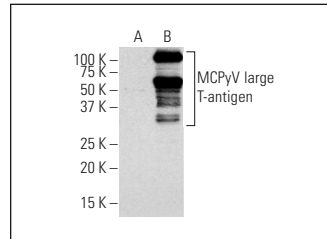
RESEARCH USE

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

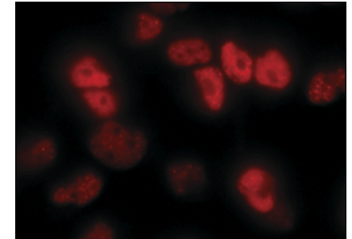
STORAGE

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

DATA



MCPyV large T-antigen (CM2B4): sc-136172. Western blot analysis of MCPyV large T-antigen expression in non-transfected (A) and gLT206 encoding wild type full length genomic T antigen transfected (B) 293T whole cell lysates. Kindly provided by Patrick S. Moore, MD, University of Pittsburgh Cancer Institute.



MCPyV large T-antigen (CM2B4): sc-136172. Immunofluorescence staining of formaldehyde-fixed UI50 cells retrovirally transduced to express MCPyV T antigen. The T antigen shows diffuse nuclear localization. Kindly provided by Patrick S. Moore, MD and Masa Shuda, PhD, University of Pittsburgh Cancer Institute.

SELECT PRODUCT CITATIONS

- Toracchio, S., et al. 2010. Lymphotropism of Merkel cell polyomavirus infection, Nova Scotia, Canada. *Emerg. Infect. Dis.* 16: 1702-1709.
- Paik, J.Y., et al. 2011. Immunohistochemistry for Merkel cell polyomavirus is highly specific but not sensitive for the diagnosis of Merkel cell carcinoma in the Australian population. *Hum. Pathol.* 42: 1385-1390.
- Willmes, C., et al. 2012. Type I and II IFNs inhibit Merkel cell carcinoma via modulation of the Merkel cell polyomavirus T antigens. *Cancer Res.* 72: 2120-2128.
- Shahzad, N., et al. 2013. The T antigen locus of Merkel cell polyomavirus downregulates human Toll-like receptor 9 expression. *J. Virol.* 87: 13009-13019.
- Wheat, R., et al. 2014. Inflammatory cell distribution in primary Merkel cell carcinoma. *Cancers* 6: 1047-1064.
- Li, J., et al. 2015. Phosphorylation of Merkel cell polyomavirus large tumor antigen at serine 816 by ATM kinase induces apoptosis in host cells. *J. Biol. Chem.* 290: 1874-1884.
- Schrama, D., et al. 2016. Serine 220 phosphorylation of the Merkel cell polyomavirus large T antigen crucially supports growth of Merkel cell carcinoma cells. *Int. J. Cancer* 138: 1153-1162.
- Alos, L., et al. 2016. p16 overexpression in high-grade neuroendocrine carcinomas of the head and neck: potential diagnostic pitfall with HPV-related carcinomas. *Virchows Arch.* 469: 277-284.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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