SANTA CRUZ BIOTECHNOLOGY, INC.

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

1. 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.
2. Feng, H., et al. 2008. Clonal integration of a polyomavirus in human Merkel cell carcinoma. Science 319: 1096-1100.
3. Duncavage, E.J., et al. 2009. Merkel cell polyomavirus: a specific marker for Merkel cell carcinoma in histologically similar tumors. Am. J. Surg. Pathol. 33: 1771-1777.

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} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MCPyV large T-antigen (CM2B4) is recommended for detection of MCPyV 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 wild-type/full length MCPyV large T-antigen: 125 kDa.

RESEARCH USE

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

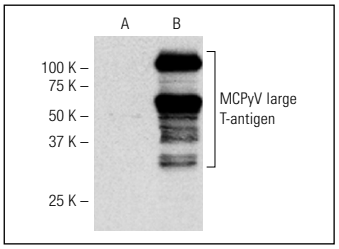
PROTOCOLS

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

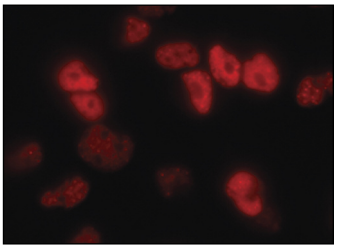
STORAGE

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 UISO 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

1. Toracchio, S., et al. 2010. Lymphotropism of Merkel cell polyomavirus infection, Nova Scotia, Canada. Emerg. Infect. Dis. 16: 1702-1709.
2. 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.
3. Kamiyama, T., et al. 2011. Metachronous Merkel cell carcinoma on both cheeks. Acta Derm. Venereol. 92: 54-56.
4. Teman, C.J., et al. 2011. Merkel cell polyomavirus (MCPyV) in chronic lymphocytic leukemia/small lymphocytic lymphoma. Leuk. Res. 35: 689-692.
5. Sihto, H., et al. 2011. Merkel cell polyomavirus infection, large T antigen, retinoblastoma protein and outcome in Merkel cell carcinoma. Clin. Cancer Res. 17: 4806-4813.
6. Houben, R., et al. 2012. An intact retinoblastoma protein-binding site in Merkel cell polyomavirus large T antigen is required for promoting growth of Merkel cell carcinoma cells. Int. J. Cancer 130: 847-856.
7. 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.
8. Angermeyer, S., et al. 2013. Merkel cell polyomavirus-positive merkel cell carcinoma cells do not require expression of the viral small T antigen. J. Invest. Dermatol. 133: 2059-2064.
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