

Mel-CAM (1): sc-135987

BACKGROUND

The tumorigenic and metastatic phenotype of melanoma cells correlates well with an increased expression of cell-cell and cell-matrix adhesion receptors. The human Mel-CAM gene encodes a transmembrane glycoprotein, also designated MCAM, MUC18 or CD146, that belongs to the immunoglobulin superfamily and functions as a Ca²⁺-independent cell adhesion molecule. The deduced human sequence of 603 amino acids consists of a signal peptide, five immunoglobulin-like domains, a transmembrane region and a short cytoplasmic tail. Mel-CAM expression is restricted to advanced primary and metastatic melanomas and to cell lines of the neuroectodermal lineage, but not normal melanocytes. Mel-CAM is found on 80% of advanced primary human melanomas and correlates well with development of metastatic disease. Mel-CAM activation initiates an outside-in signaling pathway that involves the protein tyrosine kinases Fyn, FAK and paxillin. Mel-CAM influences the dynamics of Actin cytoskeleton rearrangement and is essential for the maintenance of thymic architecture and function.

REFERENCES

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- Sers, C., et al. 1993. Genomic organization of the melanoma-associated glycoprotein MUC18: implications for the evolution of the immunoglobulin domains. *Proc. Natl. Acad. Sci. USA* 90: 8514-8518.
- Vainio, O., et al. 1996. HEMCAM, an adhesion molecules expressed by c-kit⁺ hemopoietic progenitors. *J. Cell Biol.* 135: 1655-1668.
- Shih, I.M. 1999. The role of CD146 (Mel-CAM) in biology and pathology. *J. Pathol.* 189: 4-11.
- Seftalioglu, A. and Karakoc, L. 2000. Expression of CD146 adhesion molecules (MUC18 or MCAM) in the thymic microenvironment. *Acta Histochem.* 102: 69-83.
- Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 155735. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Satyamoorthy, K., et al. 2001. Mel-CAM-specific genetic suppressor elements inhibit melanoma growth and invasion through loss of gap junctional communication. *Oncogene* 20: 4676-4684.
- Anfosso, F., et al. 2001. Outside-in signaling pathway linked to CD146 engagement in human endothelial cells. *J. Biol. Chem.* 276: 1564-1569.

CHROMOSOMAL LOCATION

Genetic locus: MCAM (human) mapping to 11q23.3.

SOURCE

Mel-CAM (1) is a mouse monoclonal antibody raised against amino acids 104-305 of Mel-CAM of human origin.

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol and 0.04% stabilizer protein.

APPLICATIONS

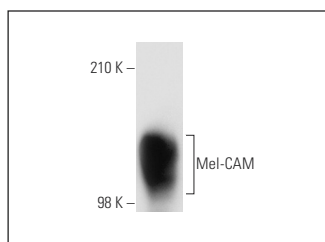
Mel-CAM (1) is recommended for detection of Mel-CAM of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Mel-CAM siRNA (h): sc-35918, Mel-CAM shRNA Plasmid (h): sc-35918-SH and Mel-CAM shRNA (h) Lentiviral Particles: sc-35918-V.

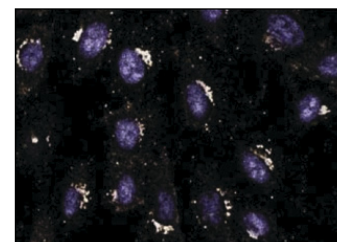
Molecular Weight of Mel-CAM: 130 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-375 cell lysate: sc-3811 or SK-MEL-24 whole cell lysate: sc-364259.

DATA



Mel-CAM (1): sc-135987. Western blot analysis of Mel-CAM expression in SK-MEL-24 whole cell lysate.



Mel-CAM (1): sc-135987. Immunofluorescence staining of human endothelial cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Cuoghi, A., et al. 2011. Role of proteomics to differentiate between benign and potentially malignant pancreatic cysts. *J. Proteome Res.* 10: 2664-2670.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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

CONJUGATES

See **Mel-CAM (P1H12): sc-18837** for Mel-CAM antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.