SANTA CRUZ BIOTECHNOLOGY, INC.

HCAM (VFF-7): sc-65412

BACKGROUND

Cell adhesion molecules (CAMs) are a family of closely related, cell surface glycoproteins that are involved in cell-cell interactions and are thought to play an important role in embryogenesis and development. HCAM, also known as CD44, LHR, MDU2, MDU3, MIC4, Pgp1, HCELL, MUTCH-I or ECMR-III, is a 742 amino acid single-pass type I membrane protein that is involved in hematopoiesis, lymphocyte activation and tumor metastasis. Functioning as a receptor for hyaluronic acid (HA) and interacting with ligands such as osteopontin (OPN), HCAM mediates both cell-cell and cell-matrix interactions, thereby playing an essential role in cell adhesion and cell migration. HCAM contains one Link domain and, due to alternative splicing events, is expressed as multiple isoforms, some of which are designated CD44R, CDw44, CD44S, CD44H (hematopoietic) and CD44E (epithelial). While most of the HCAM splice varients are expressed in tissues throughout the body, one specific isoform, namely CD44H, is expressed at high levels in cancer tissue, suggesting an important role for the CD44H splice varient in tumor progression.

REFERENCES

1. McVoy, L.A. and Kew, R.R. 2005. CD44 and Annexin A2 mediate the C5a chemotactic cofactor function of the vitamin D binding protein. J. Immunol. 175: 4754-4760.
2. Hanley, W.D., et al. 2006. Variant isoforms of CD44 are P- and L-Selectin ligands on colon carcinoma cells. FASEB J. 20: 337-339.
3. Sugahara, K.N., et al. 2006. Tumor cells enhance their own CD44 cleavage and motility by generating hyaluronan fragments. J. Biol. Chem. 281: 5861-5868.
4. Zhuo, L., et al. 2006. SHAP potentiates the CD44-mediated leukocyte adhesion to the hyaluronan substratum. J. Biol. Chem. 281: 20303-20314.
5. Mielgo, A., et al. 2007. The CD44 standard/Ezrin complex regulates FAS-mediated apoptosis in Jurkat cells. Apoptosis 12: 2051-2061.
6. Singleton, P.A., et al. 2007. CD44 regulates hepatocyte growth factor-mediated vascular integrity. Role of c-Met, Tiam1/Rac1, dynamin 2, and cortactin. J. Biol. Chem. 282: 30643-30657.
7. Desai, B., et al. 2007. Mechanisms of osteopontin and CD44 as metastatic principles in prostate cancer cells. Mol. Cancer 6: 18.
8. Golshani, R., et al. 2008. Hyaluronic acid synthase-1 expression regulates bladder cancer growth, invasion, and angiogenesis through CD44. Cancer Res. 68: 483-491.

CHROMOSOMAL LOCATION

Genetic locus: CD44 (human) mapping to 11p13.

SOURCE

HCAM (VFF-7) is a mouse monoclonal antibody raised against exon v6 on the variant portion of HCAM of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HCAM (VFF-7) is recommended for detection of HCAM of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for HCAM siRNA (h): sc-29342, HCAM shRNA Plasmid (h): sc-29342-SH and HCAM shRNA (h) Lentiviral Particles: sc-29342-V.

Molecular Weight of HCAM: 90-95 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, HeLa whole cell lysate: sc-2200 or CCRF-CEM cell lysate: sc-2225.

SELECT PRODUCT CITATIONS

1. Jiang, D., et al. 2003. Identification of metastasis-associated proteins by proteomic analysis and functional exploration of interleukin-18 in metastasis. Proteomics 3: 724-737.
2. Sun, B.S., et al. 2013. Osteopontin combined with CD44v6, a novel prognostic biomarker in non-small cell lung cancer undergoing curative resection. Ann. Thorac. Surg. 96: 1943-1951.
3. Tin, A.S., et al. 2014. Essential role of the cancer stem/progenitor cell marker nucleostemin for indole-3-carbinol anti-proliferative responsiveness in human breast cancer cells. BMC Biol. 12: 72.
4. Huang, A., et al. 2014. TMPRSS4 correlates with colorectal cancer pathological stage and regulates cell proliferation and self-renewal ability. Cancer Biol. Ther. 15: 297-304.
5. Marzese, D.M., et al. 2015. Brain metastasis is predetermined in early stages of cutaneous melanoma by CD44v6 expression through epigenetic regulation of the spliceosome. Pigment Cell Melanoma Res. 28: 82-93.
6. Glatt, D.M., et al. 2016. The interplay of antigen affinity, internalization, and pharmacokinetics on CD44-positive tumor targeting of monoclonal antibodies. Mol. Pharm. 13: 1894-1903.
7. Khan, F., et al. 2021. Identification of novel CD44v6-binding peptides that block CD44v6 and deliver a pro-apoptotic peptide to tumors to inhibit tumor growth and metastasis in mice. Theranostics 11: 1326-1344.

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.