

HCAM (F-4): sc-9960

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 variants 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 variant 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.

CHROMOSOMAL LOCATION

Genetic locus: CD44 (human) mapping to 11p13; Cd44 (mouse) mapping to 2 E2.

SOURCE

HCAM (F-4) is a mouse monoclonal antibody raised against amino acids 21-320 of HCAM of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HCAM (F-4) is available conjugated to agarose (sc-9960 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-9960 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-9960 PE), fluorescein (sc-9960 FITC), Alexa Fluor[®] 488 (sc-9960 AF488), Alexa Fluor[®] 546 (sc-9960 AF546), Alexa Fluor[®] 594 (sc-9960 AF594) or Alexa Fluor[®] 647 (sc-9960 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-9960 AF680) or Alexa Fluor[®] 790 (sc-9960 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

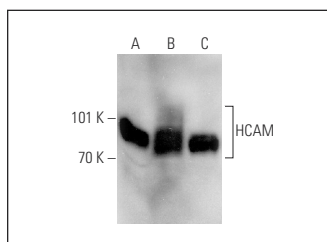
HCAM (F-4) is recommended for detection of HCAM of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

Suitable for use as control antibody for HCAM siRNA (h): sc-29342, HCAM siRNA (m): sc-35534, HCAM shRNA Plasmid (h): sc-29342-SH, HCAM shRNA Plasmid (m): sc-35534-SH, HCAM shRNA (h) Lentiviral Particles: sc-29342-V and HCAM shRNA (m) Lentiviral Particles: sc-35534-V.

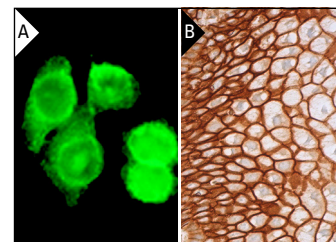
Molecular Weight of HCAM: 90-95 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HUV-EC-C whole cell lysate: sc-364180 or HL-60 whole cell lysate: sc-2209.

DATA



HCAM (F-4): sc-9960. Western blot analysis of HCAM expression in HUV-EC-C (A), human PBL (B) and HeLa (C) whole cell lysates.



HCAM (F-4): sc-9960. Immunofluorescence staining of methanol-fixed HeLa cells showing cell junction and membrane staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human vagina tissue showing membrane staining of squamous epithelial cells (B).

SELECT PRODUCT CITATIONS

1. Weigel, J.A., et al. 2002. The hyaluronan receptor for endocytosis (HARE) is not CD44 or CD54 (ICAM-1). *Biochem. Biophys. Res. Commun.* 294: 918-922.
2. Addison, J.B., et al. 2021. Functional hierarchy and cooperation of EMT master transcription factors in breast cancer metastasis. *Mol. Cancer Res.* 19: 784-798.
3. Chu, T.H., et al. 2022. Leukocyte cell-derived chemotaxin 2 regulates epithelial-mesenchymal transition and cancer stemness in hepatocellular carcinoma. *J. Biol. Chem.* 298: 102442.
4. Kim, D.E., et al. 2023. PLK1-mediated phosphorylation of β-catenin enhances its stability and transcriptional activity for extracellular matrix remodeling in metastatic NSCLC. *Theranostics* 13: 1198-1216.

STORAGE

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