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AC133 (CD133) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2010B

Product Information

Application	WB, IF, IHC-P, FC, E
Primary Accession	O43490
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB1784
Calculated MW	97202

Additional Information

Gene ID	8842
Other Names	Prominin-1, Antigen AC133, Prominin-like protein 1, CD133, PROM1, PROML1
Target/Specificity	This AC133 (CD133) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide selected from the C-terminal region of human AC133.
Dilution	WB~~1:1000 IF~~1:10~50 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	AC133 (CD133) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PROM1
Synonyms	PROML1
Function	May play a role in cell differentiation, proliferation and apoptosis (PubMed:24556617). Binds cholesterol in cholesterol- containing plasma membrane microdomains and may play a role in the organization of the

	apical plasma membrane in epithelial cells. During early retinal development acts as a key regulator of disk morphogenesis. Involved in regulation of MAPK and Akt signaling pathways. In neuroblastoma cells suppresses cell differentiation such as neurite outgrowth in a RET-dependent manner (PubMed:20818439).
Cellular Location	Apical cell membrane; Multi-pass membrane protein. Cell projection, microvillus membrane; Multi-pass membrane protein. Cell projection, cilium, photoreceptor outer segment Endoplasmic reticulum. Endoplasmic reticulum-Golgi intermediate compartment. Note=Found in extracellular membrane particles in various body fluids such as cerebrospinal fluid, saliva, seminal fluid and urine
Tissue Location	Isoform 1 is selectively expressed on CD34 hematopoietic stem and progenitor cells in adult and fetal bone marrow, fetal liver, cord blood and adult peripheral blood. Isoform 1 is not detected on other blood cells. Isoform 1 is also expressed in a number of non-lymphoid tissues including retina, pancreas, placenta, kidney, liver, lung, brain and heart. Found in saliva within small membrane particles. Isoform 2 is predominantly expressed in fetal liver, skeletal muscle, kidney, and heart as well as adult pancreas, kidney, liver, lung, and placenta. Isoform 2 is highly expressed in fetal liver, low in bone marrow, and barely detectable in peripheral blood Isoform 2 is expressed on hematopoietic stem cells and in epidermal basal cells (at protein level). Expressed in adult retina by rod and cone photoreceptor cells (at protein level)

Background

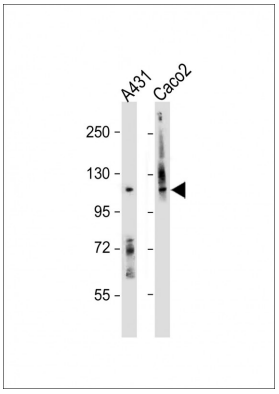
The CD133 gene codes for a pentaspan transmembrane glycoprotein. The CD133 antigen appears to belong to a new molecular family of 5-TM proteins, as the characterization of the CD133 antigen and prominin in the mouse were the first descriptions of a 5-TM glycoprotein structure. This 'family' includes members from several different species (which may be homologs) including human, mouse, rat, fly, and worm. The 5-TM structure includes an extracellular N-terminus, two short intracellular loops, two large extracellular loops and an intracellular C-terminus CD133 was initially shown to be expressed on primitive hematopoietic stem and progenitor cells and retinoblastoma. CD133 has since been shown to be expressed on hemangioblasts, and neural stem cells as well as on developing epithelium. Expression patterns for CD133 generally mimic those of the murine prominin molecule, although CD133 antigen has not yet been demonstrated on adult epithelial tissue. The CD133 positive fraction of human bone marrow, cord blood and peripheral blood have been shown to efficiently engraft in xenotransplantation models, and have been shown to contain the majority of the granulocyte/macrophage precursors, NOD/SCID repopulating cells and CD34 + dendritic cell precursors. Phenotypically, CD133 positive cells in blood and marrow are CD34 bright, with CD34 dim CD71 bright cells being negative for CD133 expression. Many leukemias express CD133 as well as CD34 , but some investigators have noted leukemic blasts which are CD133+ and CD34 negative. No natural ligand has yet been demonstrated for the CD133 molecule, and its function in hematopoietic tissue is unknown.

References

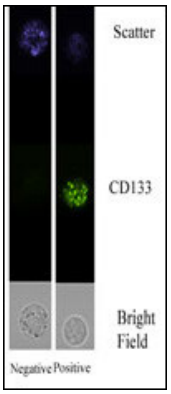
Giebel, B., et al., Blood 104(8):2332-2338 (2004). Torrente, Y., et al., J. Clin. Invest. 114(2):182-195 (2004). Shmelkov, S.V., et al., Blood 103(6):2055-2061 (2004). Yu, Y., et al., J. Biol. Chem. 277(23):20711-20716 (2002). Corbeil, D., et al., Biochem. Biophys. Res. Commun. 285(4):939-944 (2001).

Images

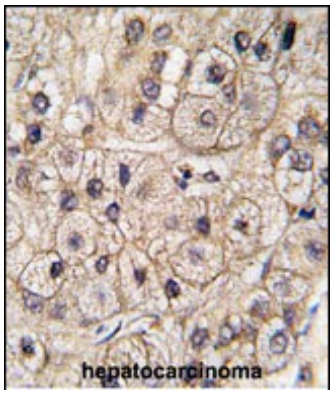
All lanes : Anti-hAC133-K848 at 1:2000 dilution Lane 1: A431 whole cell lysate Lane 2: Caco2 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat



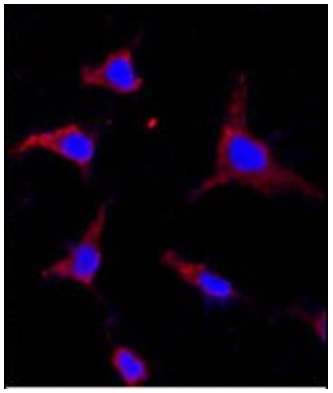
Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 97 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Immunofluorescence data is of Bone Marrow Mononuclear Cells stained with polyclonal CD133. Image courtesy of Rick Cohen from the Coriell Institute for Medical Research (NJ, USA).

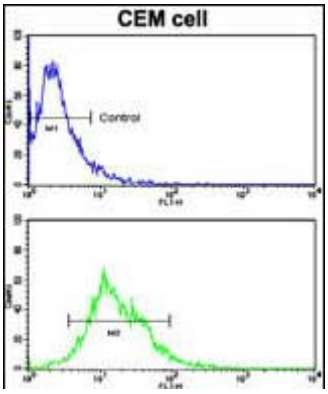


Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with AC133 (CD133) antibody (C-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Immunofluorescence analysis of anti-AC133 (CD133) Antibody (C-term) in HeLa cells. 0.025 mg/ml primary antibody was followed by Alexa-Fluor-546-conjugated donkey anti-rabbit lgG (H+L). Alexa-Fluor-546 emits orange fluorescence. Blue counterstaining is DAPI.

Flow cytometric analysis of CEM cells using AC133 (CD133) Antibody (C-term) (bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Citations

- Ionizing Radiation Induces Resistant Glioblastoma Stem-Like Cells by Promoting Autophagy via the Wnt/β-Catenin Pathway
- A possible interplay between HR-HPV and stemness in tumor development: an in vivo investigation of CD133 as a putative marker of cancer stem cell in HPV18-infected KB cell line
- Establishment and genetic characterization of ANGM-CSS, a novel, immortal cell line derived from a human glioblastoma multiforme.
- Expression of cancer stem cell markers CD133 and CD44 in locoregional recurrence of rectal cancer.
- Melatonin Inhibits Glioblastoma Stem-like cells through Suppression of EZH2-NOTCH1 Signaling Axis.

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