

CPTC-CD33-1 (CAB079996)

Uniprot ID: P20138

Protein name: CD33_HUMAN

Full name: Myeloid cell surface antigen CD33

Tissue specificity: Monocytic/myeloid lineage cells. In the brain, CD33 is mainly expressed on microglial cells.

Function: Sialic-acid-binding immunoglobulin-like lectin (Siglec) that plays a role in mediating cell-cell interactions and in maintaining immune cells in a resting state (PubMed:10611343, PubMed:15597323, PubMed:11320212). Preferentially recognizes and binds alpha-2,3- and more avidly alpha-2,6-linked sialic acid-bearing glycans (PubMed:7718872). Upon engagement of ligands such as C1q or sialylated glycoproteins, two immunoreceptor tyrosine-based inhibitory motifs (ITIMs) located in CD33 cytoplasmic tail are phosphorylated by Src-like kinases such as LCK (PubMed:28325905, PubMed:10887109). These phosphorylations provide docking sites for the recruitment and activation of protein-tyrosine phosphatases PTPN6/SHP-1 and PTPN11/SHP-2 (PubMed:10556798, PubMed:10206955, PubMed:10887109). In turn, these phosphatases regulate downstream pathways through dephosphorylation of signaling molecules (PubMed:10206955, PubMed:10887109). One of the repressive effect of CD33 on monocyte activation requires phosphoinositide 3-kinase/PI3K (PubMed:15597323).

Subcellular location:

Isoform CD33M:

Cell membrane (*experimental evidence*) (Topo: Single-pass type I membrane protein)

Isoform CD33m:

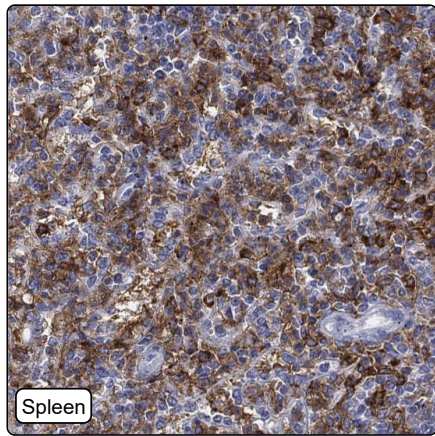
Peroxisome (*experimental evidence*)

NOTE: CD33m isoform does not localize to cell surfaces but instead accumulates in peroxisomes.

Protein existence: Experimental evidence at protein level

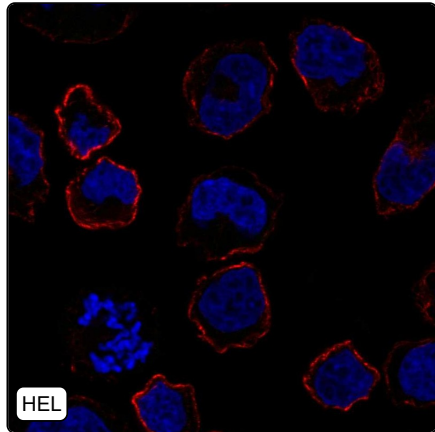
Comment:

Immunohistochemistry



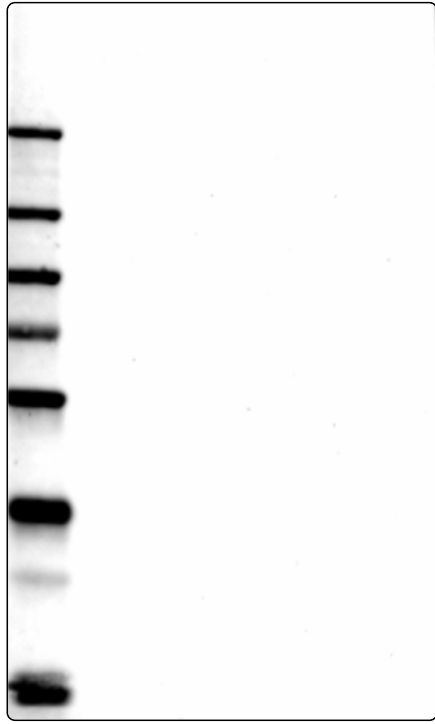
IHC protocol:	HIER pH6, Dilution 1:250
IHC test staining:	Membranous and cytoplasmic expression in subsets of lymphoid and hematopoietic cells.
Literature conformance:	Consistent with gene/protein characterization data
Literature significance:	Limited
RNA consistency:	Mainly consistent with RNA expression data
IHC Sibling similarity:	Other antibody shows partly similar IHC staining pattern

Immunofluorescence



IF Overlay:	antibody (green), anti-tubuline (red) and DAPI (blue)
IF main location:	
IF additional location:	
IF Antibody score:	Failed IF
IF in HEL:	Negative
IF in THP-1:	Negative
IF in U-2 OS:	Negative

Western blot



WB Size markers (kDa):	250, 130, 100, 70, 55, 35, 25, 15, 10
WB Lanes:	Marker (1), RT4 (2), U-251 MG (3), Plasma (4), Liver (5), Tonsil (6)
WB Target weight (kDa):	22, 25, 34, 40
WB Validation:	Uncertain (No bands detected.)