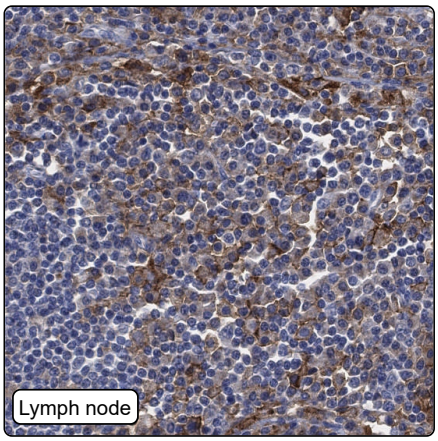
CPTC-CD33-D2-1 (CAB080305)

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 syalylated 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

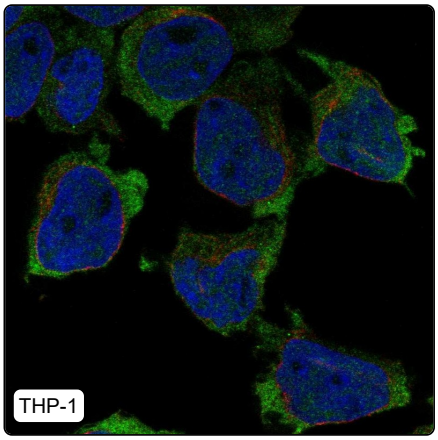
Comment:

Immunohistochemistry



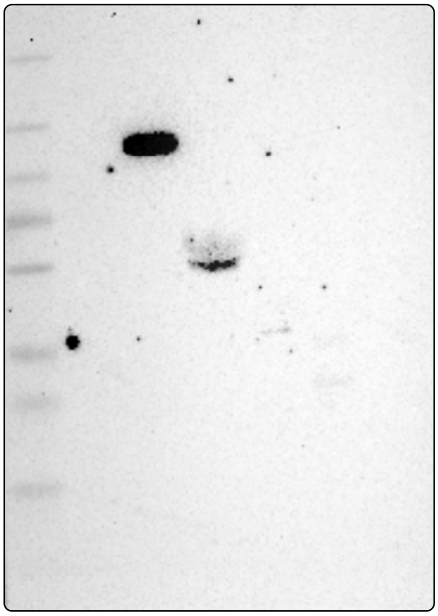
IHC protocol:	HIER pH6, Dilution 1:250
IHC test staining:	Cytoplasmic positivity was observed mainly in immune cells.
Literature conformance:	Consistent with extensive gene/protein characterization data
Literature significance:	
RNA similarity:	Low consistency between antibody staining and RNA expression data
RNA tissue specificity:	Tissue enhanced (bone marrow,lymphoid tissue)
RNA tissue distribution:	Detected in many
IHC Sibling similarity:	Other antibody shows similar IHC staining pattern

Immunofluorescence



IF Overlay:	antibody (green), anti-tubulin (red) and DAPI (blue)
IF main location:	Plasma membrane - 3: **Supportive** (auto)
IF additional location:	Cytosol - 12: **Uncertain** (auto)
IF approved for publication on HPA:	Yes
IF in THP-1:	Plasma membrane
IF in U2OS:	Plasma membrane Cytosol

Western blot



WB Size markers (kDa):	250, 130, 100, 70, 55, 35, 25, 15, 10
WB Lanes:	Marker (1), RT-4 (2), U-251MG (3), Plasma (4), Liver (5), Tonsil (6)
WB Target weight (kDa):	22, 25, 34, 40
WB Validation:	Uncertain (Only bands not corresponding to the predicted size.)