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CD33 Antibody

Catalog # ASC11404

Product Information

Application	WB, E
Primary Accession	P20138
Other Accession	NP_001763, 130979981
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	39825
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	CD33 antibody can be used for detection of CD33 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	945
Other Names	Myeloid cell surface antigen CD33, Sialic acid-binding Ig-like lectin 3, Siglec-3, gp67, CD33, CD33, SIGLEC3
Target/Specificity	CD33; At least three isoforms of CD33 are known to exist; this antibody will detect all three isoforms.
Reconstitution & Storage	CD33 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	CD33 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CD33
Synonyms	SIGLEC3
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:11320212, PubMed:15597323). 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:10887109, PubMed:28325905). These phosphorylations provide docking sites for the recruitment and activation of protein-tyrosine phosphatases PTPN6/SHP-1 and PTPN11/SHP- 2 (PubMed:10206955, PubMed:10556798, 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).
Cellular Location	[Isoform CD33M]: Cell membrane; Single-pass type I membrane protein
Tissue Location	Monocytic/myeloid lineage cells. In the brain, CD33 is mainly expressed on microglial cells

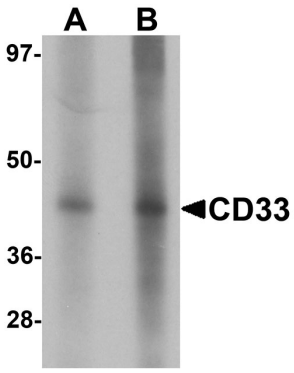
Background

CD33 Antibody: CD33 is a member of the sialic acid-binding immunoglobulin-like lectin (Siglec) family that is highly expressed on myeloid progenitor cells. Assessment of CD33 expression is of great importance in the immunodiagnosis of acute leukemia, allowing distinction between myeloid and lymphoid origin, as CD33 is generally restricted to the myelomonocytic lineage. CD33 can associate with the protein-tyrosine phosphatases SHP-1 and SHP-2 and thus could modulate downstream signaling events associated with cell activation. Common variants of CD33 have been found to be associated with late-onset Alzheimer's disease.

References

Freeman SD, Kelm S, Barber EK, et al. Characterization of CD33 as a new member of the sialoadhesion family of cellular interaction molecules. Blood 1995; 85:2005-12.
Crocker PR and Varki A. Siglecs, sialic acids, and innate immunity. Trends Immunol. 2001; 22:337-42.
Taylor VC, Buckley CD, Douglass M, et al. The myeloid-specific sialic acid-binding receptor, CD33, associates with the protein-tyrosine phosphatases, SHP-1 and SHP-2. J. Biol. Chem. 1999; 274:11505-12
Naj AC, Jun G, Beecham GW, et al. Common variants at MS4A4/MS4A6E, CD2AP, CD33 and EPHA are associated with late-onset Alzheimer’s disease. Nat. Genet. 2011; 43:436-41

Images



Western blot analysis of CD33 in 3T3 cell lysate with CD33 antibody at (A) 1 and (B) 2 µg/mL.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.