

CD22 (RFB-4): sc-7307

BACKGROUND

The B lymphocyte specific CD22 antigen, also designated B-lymphocyte cell adhesion molecule (BLCAM), sialic acid-binding Ig-like lectin 2 (Siglec-2) and Leu-14, is a type I integral membrane glycoprotein, structurally similar to other cell adhesion molecules (CAMs), which acts as a regulator of B cell signaling. CD22 is expressed as both a cytoplasmic and membrane protein during discrete stages of B cell lymphocyte differentiation. The cytoplasmic form of CD22, expressed early in B cell development, is a useful marker for acute lymphocytic leukemia. The membrane form of CD22 is expressed in mature B cells prior to their differentiation into plasma cells. Alternative splicing results in two different isoforms, CD22 α and CD22 β . The CD22 β monomer is the principally occurring isoform but CD22 also appears as a heterodimer of CD22 β and the shorter isoform, CD22 α .

REFERENCES

1. Stamenkovic, I., et al. 1990. The B-cell antigen CD22 mediates monocyte and erythrocyte adhesion. *Nature* 345: 74-77.
2. Wilson, G.L., et al. 1991. cDNA cloning of the B cell membrane protein CD22: a mediator of B-B cell interactions. *J. Exp. Med.* 173: 137-146.
3. Powell, L.D., et al. 1993. Natural ligands of the B cell adhesion molecule CD22 β carry N-linked oligosaccharides with α -2,6-linked sialic acids that are required for recognition. *J. Biol. Chem.* 268: 7019-7027.
4. Wilson, G.L., et al. 1993. Genomic structure and chromosomal mapping of the human CD gene. *J. Immunol.* 150: 5013-5024.
5. Sgroi, D., et al. 1995. Regulation of CD45 engagement by the B-cell receptor CD22. *Proc. Natl. Acad. Sci. USA* 92: 4026-4030.
6. Tedder, T.F., et al. 1997. CD22, a B lymphocyte-specific adhesion molecule that regulates antigen receptor signaling. *Annu. Rev. Immunol.* 15: 481-504.
7. Wakabayashi, C., et al. 2002. A distinct signaling pathway used by the IgG-containing B cell antigen receptor. *Science* 298: 2392-2395.
8. John, B., et al. 2003. The B cell coreceptor CD22 associates with AP50, a clathrin-coated pit adapter protein, via tyrosine-dependent interaction. *J. Immunol.* 170: 3534-3543.

CHROMOSOMAL LOCATION

Genetic locus: CD22 (human) mapping to 19q13.12.

SOURCE

CD22 (RFB-4) is a mouse monoclonal antibody raised against human tonsil lymphocytes.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD22 (RFB-4) is available conjugated to either phycoerythrin (sc-7307 PE) or fluorescein (sc-7307 FITC), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

CD22 (RFB-4) is recommended for detection of CD22 of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1×10^6 cells).

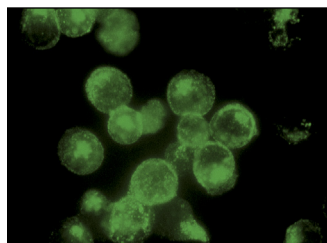
Suitable for use as control antibody for CD22 siRNA (h): sc-29807, CD22 shRNA Plasmid (h): sc-29807-SH and CD22 shRNA (h) Lentiviral Particles: sc-29807-V.

Molecular Weight of CD22: 130 kDa.

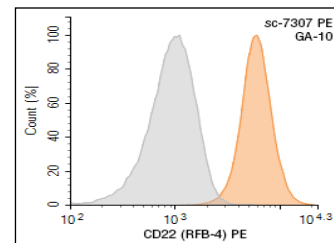
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



CD22 (RFB-4): sc-7307. Immunofluorescence staining of methanol-fixed Ramos cells showing membrane localization.



CD22 (RFB-4) PE: sc-7307 PE. FCM analysis of GA-10 cells. Gray histogram represents the isotype control, normal mouse IgG $_1$ -PE: sc-2866.

SELECT PRODUCT CITATIONS

1. DiJoseph, J.F., et al. 2005. Antibody-targeted chemotherapy of B-cell lymphoma using calicheamicin conjugated to murine or humanized antibody against CD22. *Cancer Immunol. Immunother.* 54: 11-24.
2. DiJoseph, J.F., et al. 2006. Antitumor efficacy of a combination of CMC-544 (inotuzumab ozogamicin), a CD22-targeted cytotoxic immunoconjugate of calicheamicin, and rituximab against non-Hodgkin's B-cell lymphoma. *Clin. Cancer Res.* 12: 242-249.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.