Human Siglec-2/CD22 Antibody

Monoclonal Mouse IgG_{2B} Clone # 219903

Catalog Number: MAB19682

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Siglec-2/CD22 in direct ELISAs.
Source	Monoclonal Mouse IgG_{2B} Clone # 219903
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Siglec-2/CD22 Asp20-Arg687 Accession # P20273
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

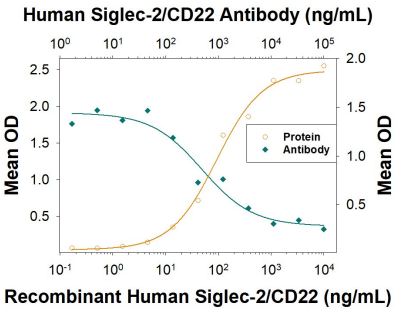
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

Neutralization	Measured by its ability to neutralize Siglec-2/CD22-mediated adhesion of human red blood cells. Kelm, S. *et al.* (1994) Current Biology **4**:965. The Neutralization Dose (ND_{50}) is typically 6-60 ng/mL in the presence of 0.2 µg/mL Recombinant Human Siglec-2/CD22 Fc Chimera.

DATA

Neutralization



Cell Adhesion Mediated by Siglec-2/CD22 and Neutralization by Human Siglec-2/CD22 Antibody. Recombinant Human Siglec-2/CD22 Fc Chimera (Catalog # Catalog # 1968-SL), immobilized onto a microplate, supports the adhesion of human red blood cells in a dose-dependent manner (orange line) as measured by the psuedoperoxidase assay. Adhesion elicited by Recombinant Human Siglec-2/CD22 Fc Chimera (0.2 µg/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human Siglec-2/CD22 Monoclonal Antibody (Catalog # MAB19682). The ND_{50} is typically 6-60 ng/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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Human Siglec-2/CD22 Antibody

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BACKGROUND

Siglecs (Sialic acid binding Ig-like Lectins) are I-type (Ig-type) lectins belonging to the Ig superfamily. They are characterized by an N-terminal V-type Ig-like domain which mediates sialic acid binding, followed by varying numbers of C2-type Ig-like domains (1, 2). Fourteen human Siglecs have been cloned and characterized. They are Sialoadhesin/CD169/Siglec-1, CD22/Siglec-2, CD33/Siglec-3, Myelin-Associated Glycoprotein (MAG/Siglec-4a), and the identified Siglecs 5 to 11, plus 14 to 16 (1-3). To date, no Siglec has been shown to recognize any cell surface ligand other than sialic acid, suggesting that interactions with glycans containing this carbohydrate are important in mediating the biological functions of Siglecs. Human Siglec-2, also known as B-cell antigen CD22 or B lymphocyte cell adhesion molecule (BL-CAM), is a B cell restricted glycoprotein that is expressed in the cytoplasm of progenitor B and pre-B cells and on the surface of mature B cells and intestinal eosinophils (3,4). Two distinct human Siglec-2/CD22 cDNAs that arise from differential RNA processing of the same gene have been isolated. The predominant Siglec-2/CD22β encodes an 847 amino acid (aa) polypeptide with a hydrophobic signal peptide, an V-type N-terminal Ig-like domain, six C2-type Ig-like domains, a transmembrane region and a cytoplasmic tail with 4 immunoreceptor tyrosine-based inhibition motifs (ITIMs) (5). The variant Siglec-2/CD22α encodes a 647 aa polypeptide missing two C2-type Ig-like domains and has a truncated (23 aa) cytoplasmic tail (6). Siglec-2/CD22 is an adhesion molecule that preferentially binds α2,6- linked sialic acid on the same (cis) or adjacent (trans) cells. Besides its role as an adhesion molecule, Siglec-2/CD22 is a coreceptor that physically interacts with B cell receptor (BCR) and is rapidly phosphorylated upon BCR ligation (3). It negatively regulates BCR signals by recruiting tyrosine phosphatase SHP-1 to its ITIMs, likely within large oligomeric complexes. Over aa 20-687, human and mouse share 59% aa sequence identity.

References:

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6. Stamenkovic, I. and B. Seed (1990) Nature **345**:74.

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