Recombinant Human Siglec-2/CD22 Fc Chimera Atto 647N

Catalog Number: ATM1968

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived human Siglec-2/CD22 protein

Human Siglec-2/CD22 (Asp20-Arg687) Accession # CAA42006.1	DIEGRMD	Human IgG_1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis

Asp20

Structure / Form

Disulfide-linked homodimer, labeled with Atto 647N via amines
Excitation Wavelength: 647 nm
Emission Wavelenght: 667 nm

Predicted Molecular Mass

101.9 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	114-126 kDa, under reducing conditions
Activity	Measured by flow cytometry for its ability to bind anti-Human Siglec-2/CD22 Monoclonal Antibody conjugated fluorescent beads.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>80%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Supplied as a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping

The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.

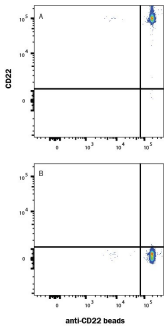
Stability & Storage

Protect from light. Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 6 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after opening.
- 3 months, -20 to -70 °C under sterile conditions after opening.

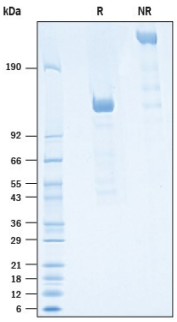
DATA

Flow Cytometry



Detection of Human Siglec-2/CD22 Antibody with Recombinant Human Siglec-2/CD22 Protein, Atto 647N Conjugate by Flow Cytometry. Fluorescent beads conjugated to anti-Human Siglec 2/CD22 Monoclonal Antibody (Catalog # MAB1968) were stained with (A) Recombinant Human Siglec 2/CD22 Protein, Atto 647N Conjugate (Catalog # ATM1968) or (B) unstained.

SDS-PAGE



2 µg/lane of Recombinant Human Siglec-2/CD22 Protein, Atto 647N Conjugate (Catalog # ATM1968) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 114-126 kDa and 228-252 kDa, respectively.

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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 Ig-like V-type domain which mediates sialic acid binding, followed by varying numbers of Ig-like C2-type domains (1, 2). Eleven 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 (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. 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 N-terminal Ig-like V-type domain, six Ig-like C2-type domains, a transmembrane region and a cytoplasmic tail with 4 immunoreceptor tyrosine-based inhibition motifs (ITIMs) (4). The variant Siglec-2/CD22α encodes a 647 aa polypeptide missing two Ig-like C2-type domains and has a truncated (23 aa) cytoplasmic tail (5). Siglec-2/CD22 is an adhesion molecule that preferentially binds α2,6- linked sialic acid on the same (cis) or adjacent (trans) cells. Interaction of CD22 with trans ligands on opposing cells was found to be favored over the binding of ligands in cis (9). 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. It negatively regulates BCR signals by recruiting tyrosine phosphatase SHP-1 to its ITIMs. Phosphorylated Siglec-2/CD22 can also interact with other intracellular effector proteins such as Syk, PLCγ, PI3 kinase and Grb-2, suggesting it may play a role in positive signaling (2, 7, 8).

References:

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