Recombinant Cynomolgus Monkey Siglec-2/CD22

Catalog Number: 9864-SL

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived cynomolgus monkey Siglec-2/CD22 protein Asp20-Arg687, with a C-terminal 6-His tag Accession # EHH59463
N-terminal Sequence Analysis	Asp20
Predicted Molecular Mass	76 kDa

SPECIFICATIONS

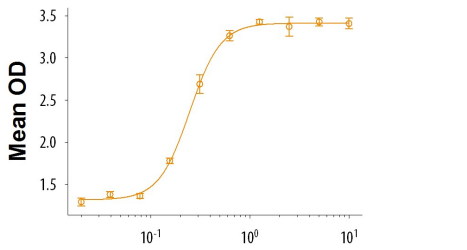
SDS-PAGE	100-113 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of human red blood cells. Kelm, S. *et al.* (1994) Current Biology **4**:965. The ED_{50} for this effect is 0.07-0.42 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in 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. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

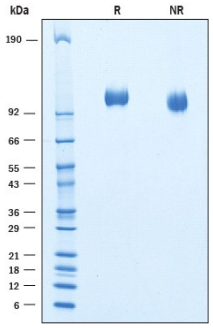
DATA

Bioactivity



Immobilized Recombinant Cynomolgus Monkey Siglec-2/CD22 (Catalog # 9864-SL) supports the adhesion of human red blood cells. The ED_{50} for this effect is 0.07-0.42 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Cynomolgus Monkey Siglec-2 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at ~110 kDa.

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BACKGROUND

Siglecs are sialic acid specific I-type lectins that are characterized by an extracellular domain (ECD) with an N-terminal Ig-like V-type domain followed by varying numbers of Ig-like C2-type domains (1, 2). 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. In humans, two distinct Siglec-2 cDNAs that arise from differential RNA processing of the same gene have been isolated. The predominant Siglec-2 (Isoform CD22-beta) 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 four immunoreceptor tyrosine-based inhibition motifs (ITIMs) (3). The variant Siglec-2 (Isoform CD22-alpha) encodes a 647 aa polypeptide missing two Ig-like C2-type domains and has a truncated (23 aa) cytoplasmic tail (4). Within the ECD, cynomolgus Siglec-2 shares 85%, and 55% aa sequence identity with human and mouse Siglec-2, respectively. Siglec-2 is an adhesion molecule that preferentially binds alpha 2,6- linked sialic acid on the same (cis) or adjacent (trans) cells. Interaction of Siglec-2 with trans ligands on opposing cells is found to be favored over the binding of ligands *in cis* (5). Consistent with a single ligand-binding region, the first two N-terminal Ig-like domains mediated CD22 adhesion with lymphocytes, neutrophils, monocytes, and erythrocytes (6). Besides its role as an adhesion molecule, Siglec-2 is a co-receptor 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 can also interact with other intracellular effector proteins such as Syk, PLC gamma, PI3 kinase and Grb-2, suggesting it may play a role in positive signaling (7, 8).

References:

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