

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived mouse Siglec-F protein Asp18-Thr437, with a C-terminal 6-His tag Accession # Q920G3
N-terminal Sequence Analysis	Asp18
Predicted Molecular Mass	46 kDa

SPECIFICATIONS

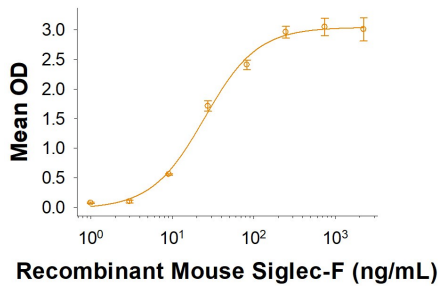
SDS-PAGE	59-68 kDa, under reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of human red blood cells. Kelm, S. <i>et al.</i> (1994) Current Biology 4:965. The ED ₅₀ for this effect is 8-48 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by 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 MES and NaCl with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in water.
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. <ul style="list-style-type: none"> • 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.

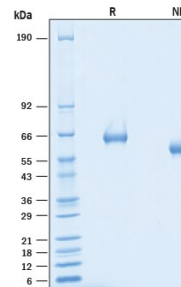
DATA

Bioactivity



When Recombinant Mouse Siglec-F His-tag (Catalog # 10171-SF) is immobilized onto a His Tag Antibody (Catalog # MAB050R) coated plate, it supports the adhesion of human red blood cells. The ED₅₀ for this is 8-48 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Mouse Siglec-F His-tag (Catalog # 10171-SF) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 59-68 kDa.

BACKGROUND

Siglecs (1) (sialic acid binding Ig-like lectins) are I-type (Ig-type) lectins (2) belonging to the Ig superfamily. They are characterized by an N-terminal Ig-like V-type domain which mediates sialic acid binding (3), followed by varying numbers of Ig-like C2-type domains (1, 4). Eleven human Siglecs have been cloned and characterized (1, 4). They are sialoadhesin/CD169/Siglec-1, CD22/Siglec-2, CD33/Siglec-3, Myelin-Associated Glycoprotein (MAG/Siglec-4a) and Siglec 5 to 11 (4-6). To date, no Siglec has been shown to recognize any cell surface ligand other than sialic acids, suggesting that interactions with glycans containing this carbohydrate are important in mediating the biological functions of Siglecs. Siglec 5 to 11 share a high degree of sequence similarity with CD33/Siglec-3 both in their extracellular and intracellular regions. They are collectively referred to as CD33-related Siglecs. One remarkable feature of the CD33-related Siglecs is their differential expression pattern within the hematopoietic system (4, 5). This fact, together with the presence of two conserved immunoreceptor tyrosine-based inhibition motifs (ITIMs) in their cytoplasmic tails, suggests that CD33-related Siglecs are involved in the regulation of cellular activation within the immune system. Mouse Siglec-F cDNA encodes a 569 amino acid polypeptide with a hydrophobic signal peptide, an N-terminal Ig-like V-type domain, three Ig-like C2-type domains, a transmembrane region and a cytoplasmic tail (7). The expression of Siglec-F is restricted to the cells of myelomonocytic lineage. Mouse Siglec-F is likely an ortholog of human Siglec-5. Unlike many human CD33-related Siglecs, which show similar binding to both α 2,3- and α 2,6-linked sialic acids, mouse Siglec-F preferentially recognize α 2,3-linked sialic acid.

References:

1. Crocker, P.R. *et al.* (1998) *Glycobiology* **8**:v.
2. Powell, L.D. *et al.* (1995) *J. Biol. Chem.* **270**:14243.
3. May, A.R. *et al.* (1998) *Mol. Cell* 1998. **1**:719.
4. Crocker, P.R. and A. Varki (2001) *Trends Immunol.* **22**:337.
5. Crocker, P.R. *et al.* (2001) *Immunology* **103**:137.
6. Angata, T. *et al.* (2002) *J. Biol. Chem.* **277**:24466.
7. Angata, T. *et al.* (2001) *J. Biol. Chem.* **276**:45128.