

**DESCRIPTION**

**Source** Human embryonic kidney cell, HEK293-derived human SIRP beta 2 protein

Human SIRP beta 2 (Gln33-Gly287) Accession # Q5JXA9	IEGRMD	Human IgG <sub>1</sub> (Pro100-Lys330)
N-terminus		C-terminus

**N-terminal Sequence Analysis** No results obtained. Gln33 inferred from enzymatic pyroglutamate treatment revealing Ser34.

**Structure / Form** Disulfide-linked homodimer

**Predicted Molecular Mass** 55 kDa

**SPECIFICATIONS**

**SDS-PAGE** 77-85 kDa, reducing conditions

**Activity** Measured by its binding ability in a functional ELISA.  
When Recombinant Human SIRP beta 2 Fc Chimera is immobilized at 1 µg/mL (100 µL/well), Biotinylated Recombinant Human CD300B/LIMR5 Fc Chimera binds with an ED<sub>50</sub> of 2-10 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.

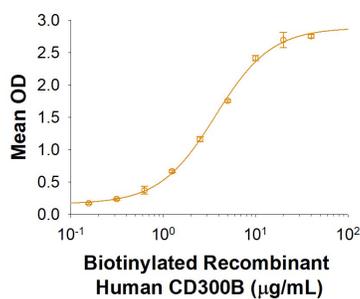
**Shipping** The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

**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 °C under sterile conditions after reconstitution.

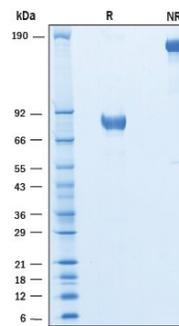
**DATA**

**Binding Activity**



When Recombinant Human SIRP beta 2 Fc Chimera (Catalog # 9998-SB) is immobilized at 1 µg/mL, Biotinylated Recombinant CD300B/LIMR-5 Fc Chimera binds with an ED<sub>50</sub> of 2-10 µg/mL.

**SDS-PAGE**



2 µg/lane of Recombinant Human SIRP beta 2 Fc Chimera was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 77-85 kDa and 150-170 kDa, respectively.

**BACKGROUND**

Signal-regulatory protein beta-2(SIRP-beta-2), is a ~37 kDa monomeric single pass type I membrane glycoprotein. It belongs to the SIRP/SHPS (CD172) family of the immunoglobulin (Ig) superfamily (1). The SIRP family are paired receptors that have similar extracellular domains but differing C-terminal domains and functions (1). SIRP-beta-2 contains an N-terminal signal peptide (aa1-32), two extracellular Ig-like domains: a V-type 1 (aa 33-143) and a V-type 2 (aa 157-258) containing three potential N-linked glycosylation sites, a helical transmembrane domain (aa 288-308), and a cytoplasmic domain (aa 309-342) (1). A positively charged residue within the transmembrane domain, in analogy to SIRP-beta-1, is implicated to mediate interaction with the adaptor DAP12 protein, which contains immunoreceptor tyrosine-based activation motifs (ITAMs) (2). Proteins in the SIRP family are typically expressed in immune cells, especially in the myeloid lineages (3). Based on expression patterns, SIRPs are thought to have roles in immune regulation (4). SIRP family members role in innate immunity and host defense has potential significance as a therapeutic target in cancer and inflammation (5, 6). There are currently no known mouse or rat homologs for this protein.

**References:**

1. van Beek, E.M. *et al.* (2005) J. Immunol. **175**:7781.
2. Liu, Y. *et al.* (2005) Journal of Biological Chemistry. **280**:36132.
3. Matozaki, T. *et al.* (2009) Trends in Cell Biology. **19**:72.
4. Barclay A.N. *et al.* (2006) Nat Rev Immunol. **6**:457.
5. Barclay A.N. *et al.* (2014) Annu Rev Immunol. **32**:25.
6. Veillette A. (2018) Trends Immunol. **39**:173.