

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived cynomolgus monkey SIRP beta 1/CD172b protein		
	Cynomolgus Monkey SIRP β1/CD172b (Glu30-Pro369) Accession # XP_005568593.1	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence	Glu30		
Analysis			
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	64 kDa		

SPECIFICATIONS

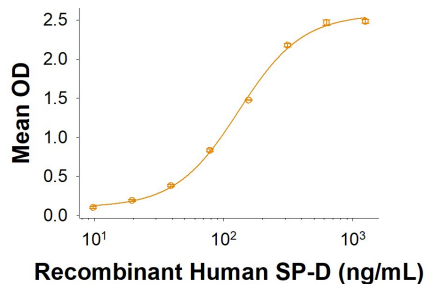
SDS-PAGE	88-99 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Cynomolgus Monkey SIRPβ1/CD172b Fc Chimera (Catalog # 10312-SB) is immobilized at 1 µg/mL (100 µL/well), Recombinant Human SP-D (Catalog # 1920-SP) binds with an ED ₅₀ of 40-320 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 PBS with Trehalose. 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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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.

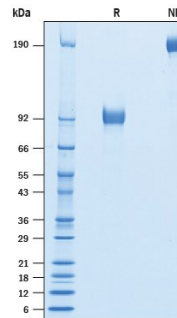
DATA

Binding Activity



When Recombinant Cynomolgus Monkey SIRPβ1/CD172b Fc Chimera (Catalog # 10312-SB) is immobilized at 1 µg/mL (100 µL/well), Recombinant Human SP-D (Catalog # 1920-SP) binds with an ED₅₀ of 40-320 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Cynomolgus Monkey SIRP β1/CD172b Fc Chimera (Catalog # 10312-SB) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 88-99 kDa and 170-200 kDa, respectively.

BACKGROUND

Signal-regulatory protein beta 1 (SIRP beta 1) is a disulfide-linked type I membrane glycoprotein that belongs to the SIRP/SHPS (CD172) family of the immunoglobulin (Ig) superfamily (1). Mature cynomolgus SIRP beta 1 consists of a 342 amino acid (aa) extracellular domain (ECD), a 26 aa transmembrane segment, and a short 4 aa cytoplasmic domain. Within the ECD, cynomolgus SIRP beta 1 shares 87% aa sequence identity with human SIRP beta 1. The SIRP family are paired receptors that have similar extracellular domains but differing C-terminal domains and functions (1). Members of this family are characterized by an extracellular region containing a V-set Ig domain containing a J-like sequence and two C1-set Ig domains (2). Positively charged residues within the transmembrane domain mediate interactions with DAP12 proteins which contain immunoreceptor tyrosine-based activation motifs (ITAMs) (3). Proteins in the SIRP family are typically expressed in cells of monocyte, macrophage or dendritic lineages (4). SIRP beta 1 has a relatively short cytoplasmic region and lacks the signaling motifs for association with phosphatases. However, formation of the SIRP beta 1/DAP12 complex in myeloid cells induce tyrosine phosphorylation, mitogen-activated protein kinase activation, and cellular activation (5, 6). Engagement of SIRP beta 1 by specific monoclonal antibodies promoted Fcγ receptor-dependent or -independent phagocytosis in mouse peritoneal macrophages (7). Surfactant protein D (SP-D) has been shown to bind SIRP alpha and SIRP beta 1 in a calcium-dependent and sugar-specific manner on a distinct binding site from CD47 (8). Although the SIRP beta 1 extracellular regions share a high degree of homology with the SIRP alpha, SIRP beta 1 has been shown not to bind CD47 (9).

References:

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3. Liu, Y. *et al.* (2005) *Journal of Biological Chemistry* **280**:36132.
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6. Brook, G. *et al.* (2004) *J Immunol.* **173**:2562.
7. Hayashi, A. *et al.* (2004) *J Biol Chem.* **279**:29450.
8. Fournier, B. *et al.* (2012) *J. Biol. Chem.* **287**:19386.
9. Seiffert, M. *et al.* (2001) *Blood* **97**:2741.