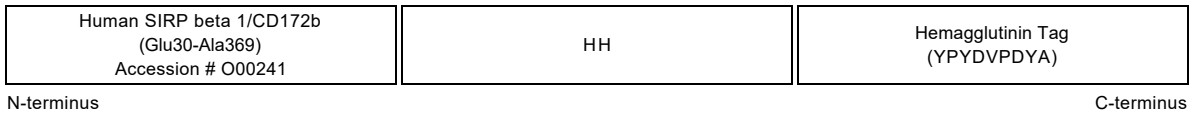
Recombinant Human SIRPβ1/CD172b

Catalog Number: 9978-SB

DESCRIPTION

Source

Human embryonic kidney cell, HEK293-derived human SIRP beta 1/CD172b protein



N-terminal Sequence Analysis	Glu30
Structure / Form	Dimer, non covalent
Predicted Molecular Mass	38 kDa

SPECIFICATIONS

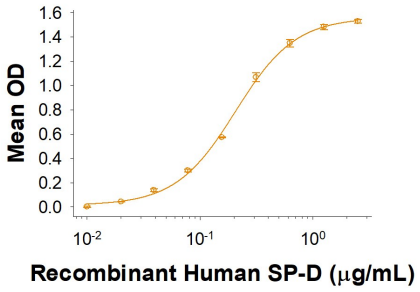
SDS-PAGE	45-61 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human SIRPβ1/CD172b (Catalog # 9978-SB) is immobilized at 1 µg/mL (100 µL/well), Recombinant Human SP-D (Catalog # 1920-SP) binds with an ED_{50} of 0.1-0.8 µg/mL
Endotoxin Level	<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.

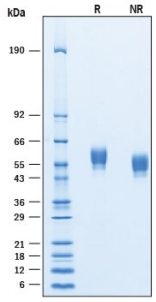
DATA

Binding Activity



When Recombinant Human SIRP beta 1/CD172b (Catalog # 9978-SB) is immobilized at 1 µg/mL, Recombinant Human SP-D (Catalog # 1920-SP) binds with an ED_{50} of 0.1-0.8 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Human SIRP beta 1/CD172b (Catalog # 9978-SB) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 45-61 kDa, respectively.

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

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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. 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. The extracellular domain contains 3 intramolecular disulfide bonds and one interchain disulfide at Cys320. 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). Human SIRP beta 1 shares a 57% sequence identity with mouse and rat SIRP beta 1. 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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