

Active Recombinant Human SIRPA protein, Fc-tagged

Cat. No. SIRPA-202H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human SIRPA(Glu31-Arg370) fused with Fc region of Human IgG1 at C-terminal was expressed in CHO.
Species	Human
Source	CHO
ProteinLength	31-370 a.a.
Description	Signal regulatory protein alpha (SIRP alpha, designated CD172a), also called SHPS-1 (SHP substrate 1) and previously, MyD-1 (Myeloid/Dendritic-1), is a monomeric ~90 kDa type I transmembrane glycoprotein that belongs to the SIRP/SHPS (CD172) family of the immunoglobulin superfamily. SIRPs are paired receptors, with similar extracellular domains but differing C-termini and functions. The 503 amino acid (aa) human SIRP alpha contains a 342 aa extracellular domain (ECD), with one V-type, and two C1 type Ig domains, and three potential N glycosylation sites. It has a 110 aa cytoplasmic sequence with ITIM motifs that recruit tyrosine phosphatases SHP-1 and SHP-2 when phosphorylated. Human SIRP alpha has more than 40 described polymorphisms, including the prominent BIT (Brain Ig like molecule with Tyrosine-based activation motifs, also called SIRP alpha 2 or PTPNS. One reported isoform lacks aa 1-101, which eliminates most of the V type Ig domain. Human SIRP alpha ECD shares 61%, 60%, 71%, 72% and 73% aa identity with mouse, rat, porcine, bovine and equine SIRP alpha, respectively; it shares 84% and 76% aa identity with human SIRP beta 1 and SIRP gamma, respectively. SIRP alpha is expressed mainly

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on myeloid cells, including macrophages, neutrophils, dendritic and Langerhans cells. It is also found on neurons, smooth muscle and endothelial cells. SIRP alpha shows adhesion to the ubiquitous CD47/IAP (integrin associated protein), while SIRP gamma binds more weakly and SIRP alpha 1 does not bind at all. Mouse and human SIRP alpha -CD47 binding only cross-reacts for specific polymorphisms and influences engraftment of xenotransplanted stem cells. SIRP alpha engagement generally produces a negative regulatory signal. Low SIRP alpha recognition of CD47, which occurs on aged erythrocytes or platelets or xenogenic cells, promotes clearance of CD47^{low} cells from circulation. SIRP alpha recognition of surfactants SP-A and SP-D in the lung can inhibit alveolar macrophage cytokine production. The CD47 integrin-SIRP alpha interaction is reported to promote macrophage fusion during osteoclastogenesis.

Predicted N Terminal	Gly27 & Glu31
Form	Lyophilized from a 0.2 µm filtered solution in PBS.
Bio-activity	Measured by the ability of the immobilized protein to support the adhesion of human red blood cells. Subramanian, S. et al. (2006) Blood 107:2548. Red blood cells, added at 10×10^6 cells/mL (100 µ/well) to SIRP alpha coated plates, will adhere after 1 hour at 37 centigrade. The ED50 for this effect is 0.6-2.4 µg/mL.
Molecular Mass	Predicted Molecular Mass: 64 (unlabeled) kDa
Endotoxin	<0.1 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.
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

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12 months from date of receipt, -20 to -70 centigrade as supplied.
 1 month, 2 to 8 centigrade under sterile conditions after reconstitution.
 3 months, -20 to -70 centigrade under sterile conditions after reconstitution.

Reconstitution Reconstitute at 500 µg/mL in PBS.

GENE INFORMATION

Gene Name [SIRPA signal-regulatory protein alpha \[Homo sapiens \]](#)

Official Symbol [SIRPA](#)

Synonyms

SIRPA; signal-regulatory protein alpha; protein tyrosine phosphatase, non receptor type substrate 1 , PTPNS1; tyrosine-protein phosphatase non-receptor type substrate 1; BIT; CD172a; MFR; MYD 1; P84; SHPS 1; SHPS1; SIRP; SIRP ALPHA 1; SIRPalpha; SIRPalpha2; myd-1 antigen; inhibitory receptor SHPS-1; macrophage fusion receptor; CD172 antigen-like family member A; tyrosine phosphatase SHP substrate 1; brain-immunoglobulin-like molecule with tyrosine-based activation motifs; MYD-1; CD172A; PTPNS1;

Gene ID [140885](#)

mRNA Refseq [NM_001040022](#)

Protein Refseq [NP_001035111](#)

MIM [602461](#)

UniProt ID [P78324](#)

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