Active Recombinant Human SIRPA Protein, Fc-tagged, Biotinylated

Cat. No. SIRPA-170H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human SIRPA((Gly27-Arg370) & (Glu31-Arg370)) fused with Fc of Human IgG1 C-terminal was expressed in CHO, Biotinylated.
Species	Human
Source	CHO
ProteinLength	(Gly27-Arg370) & (Glu31-Arg370)
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

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	human SIRP beta 1 and SIRP gamma, respectively. SIRP alpha is expressed mainly 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 CD47low 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 x 106 cells/mL (100 μ/well) to SIRP alpha coated plates, will adhere after 1 h
Molecular Mass	64 kDa (unlabeled)
Endotoxin	<0.10 EU per 1 μg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE with silver staining
Notes	Structure / Form: Disulfide-linked homodimer. Biotinylated via sugars

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Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 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
Reconstitution	Reconstitute at 500 µg/mL in PBS.
Conjugation	Biotin

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

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UniProt ID	P78324

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