Human SIRPα/CD172a Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF4546

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human SIRPα/CD172a in Western blots.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human SIRPα/CD172a Gly27-Asn370 Accession # P78324
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

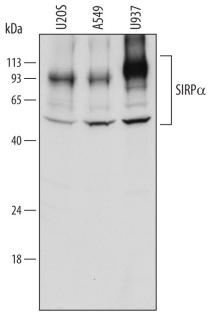
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	See Below
Simple Western	50 µg/mL	See Below

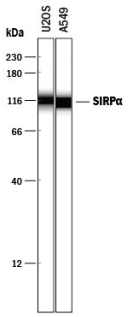
DATA

Western Blot



Detection of Human SIRPα/CD172a by Western Blot. Western blot shows lysates of U2OS human osteosarcoma cell line, A549 human lung carcinoma cell line, and U937 human histiocytic lymphoma cell line. PVDF Membrane was probed with 1 µg/mL of Sheep Anti-Human SIRPα/CD172a Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4546) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). Specific bands were detected for SIRPα/CD172a at approximately 52 kDa (unglycosylated) and 90-120 kDa (glycosylated) as indicated. This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Simple Western



Detection of Human SIRPα/CD172a by Simple Western™. Simple Western lane view shows lysates of U2OS human osteosarcoma cell line and A549 human lung carcinoma cell line, loaded at 0.2 mg/mL. A specific band was detected for SIRPα/CD172a at approximately 113-116 kDa (as indicated) using 50 µg/mL of Sheep Anti-Human SIRPα/CD172a Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4546) followed by 1:50 dilution of HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Signal regulatory protein alpha (SIRPα, 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 (1-4). SIRPs are paired receptors, with similar extracellular domains but differing C-termini and functions (1, 2). The 503 amino acid (aa) human SIRPα 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 (4). Human SIRPα has more than 40 described polymorphisms, including the prominent BIT (Brain Ig like molecule with Tyrosine-based activation motifs, also called SIRPα$_2$ or PTPNS) (5). One reported isoform lacks aa 1-101, which eliminates most of the V type Ig domain. Human SIRPα ECD shares 61%, 60%, 71%, 72% and 73% aa identity with mouse, rat, porcine, bovine and equine SIRPα, respectively; it shares 84% and 76% aa identity with human SIRPβ1 and SIRPγ, respectively (2). SIRPα is expressed mainly on myeloid cells, including macrophages, neutrophils, dendritic and Langerhans cells (3-6). It is also found on neurons, smooth muscle and endothelial cells (7-9). SIRPα shows adhesion to the ubiquitous CD47/IAP (integrin associated protein), while SIRPγ binds more weakly and SIRPα1 does not bind at all (1, 2). Mouse and human SIRPα-CD47 binding only cross-reacts for specific polymorphisms and influences engraftment of xenotransplanted stem cells (6, 10). SIRPα engagement generally produces a negative regulatory signal (4). Low SIRPα recognition of CD47, which occurs on aged erythrocytes or platelets or xenogenic cells, promotes clearance of CD47^{low} cells from circulation (11, 13). SIRPα recognition of surfactants SP-A and SP-D in the lung can inhibit alveolar macrophage cytokine production (14). The CD47 integrin-SIRPα interaction is reported to promote macrophage fusion during osteoclastogenesis (15).

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