SIRP alpha/CD172a Protein, Rat (HEK293, Fc)

Cat. No.:	HY-P76072
Synonyms:	Signal-regulatory protein alpha; CD172a; SIRP alpha; SIRPA; MFR; SHPS1; SIRP
Species:	Rat
Source:	HEK293
Accession:	P97710 (M1-N373)
Gene ID:	25528
Molecular Weight:	Approximately 64.25 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	SIRP alpha/CD172a protein, an immunoglobulin-like cell surface receptor for CD47, serves as a versatile mediator in various cellular processes. Functioning as a docking protein, it induces the translocation of PTPN6, PTPN11, and other binding partners from the cytosol to the plasma membrane. Beyond its role in cellular adhesion, SIRP alpha supports the adhesion of cerebellar neurons, neurite outgrowth, and glial cell attachment. Additionally, it plays a potential key role in intracellular signaling during synaptogenesis and synaptic function. Involved in negative regulation, SIRP alpha regulates receptor tyrosine kinase-coupled cellular responses induced by cell adhesion, growth factors, or insulin. It further mediates negative regulation of phagocytosis, mast cell activation, and dendritic cell activation. Notably, CD47 binding prevents the maturation of immature dendritic cells and inhibits cytokine production by mature dendritic cells. SIRP alpha's significance extends to antiviral immunity, as it limits new world arenavirus infection by decreasing virus internalization. Acting as a receptor for THBS1, it stimulates the phosphorylation of SIRPA and, in response to THBS1, is involved in ROS signaling in non-phagocytic cells, stimulating NADPH oxidase-derived ROS production. SIRP alpha engages in diverse interactions with proteins such as PTPN11, GRB2, FGR, JAK2, SCAP1, SCAP2, FYB1, PTK2B, and TRIM2, illustrating its intricate role as a central player in cellular signaling and immune responses.

Caution: Product has not been fully validated for medical applications. For research use only.

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