

**Synonym**

SHPS1,SIRPA,CD172A,BIT,MFR,MYD1,P84,PTPNS1

**Source**

Human SIRP alpha, His Tag (SIA-H5225) is expressed from human 293 cells (HEK293). It contains AA Glu 31 - Arg 370 (Accession # [NP\\_001035111](#)).

Predicted N-terminus: Glu 31

**Molecular Characterization**

SIRP alpha(Glu 31 - Arg 370) NP_001035111	Poly-his
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This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 38.5 kDa. The protein migrates as 47-55 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

**Endotoxin**

Less than 1.0 EU per µg by the LAL method.

**Purity**

>95% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

**Formulation**

Lyophilized from 0.22 µm filtered solution in PBS, pH7.4. Normally trehalose is added as protectant before lyophilization.

Contact us for customized product form or formulation.

**Reconstitution**

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

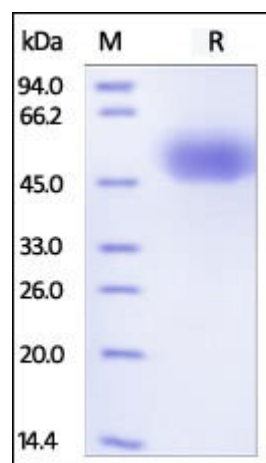
**Storage**

For long term storage, the product should be stored at lyophilized state at -20°C or lower.

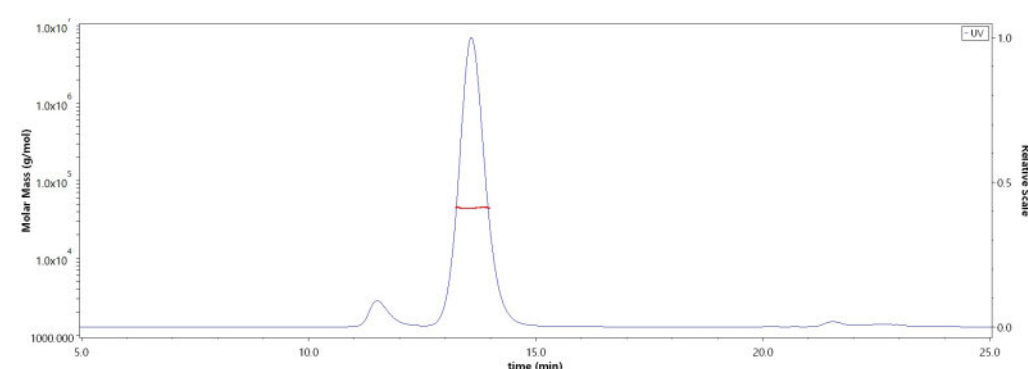
*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

**SDS-PAGE**

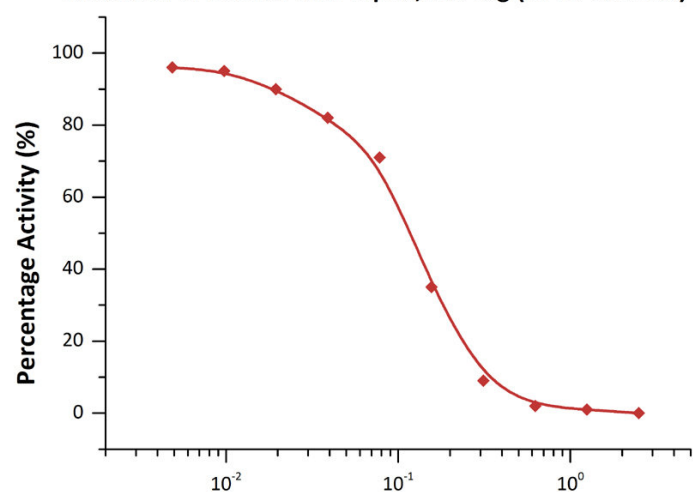
Human SIRP alpha, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

**Bioactivity-ELISA****SEC-MALS**

The purity of Human SIRP alpha, His Tag (Cat. No. SIA-H5225) is more than 90% and the molecular weight of this protein is around 40-55 kDa verified by SEC-MALS.

[Report](#)

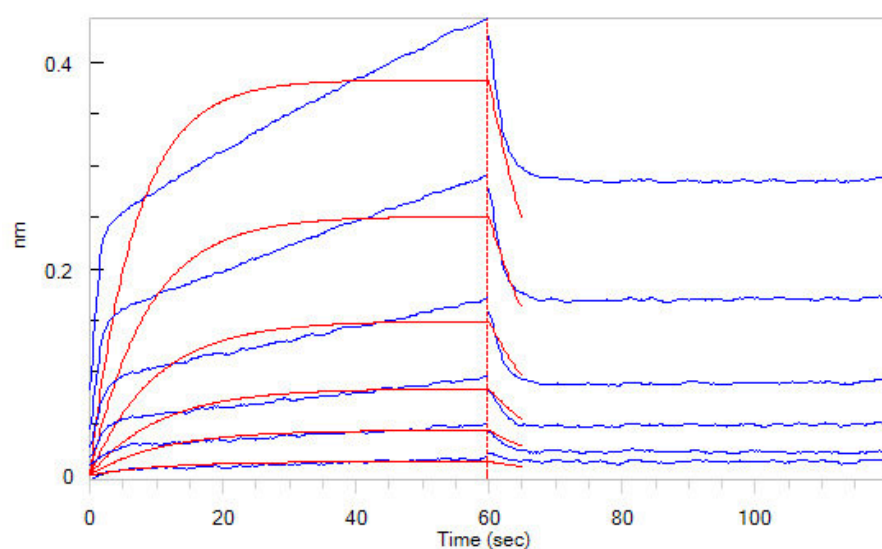
Inhibition of Human SIRP alpha, His Tag (HPLC-verified) ELISA



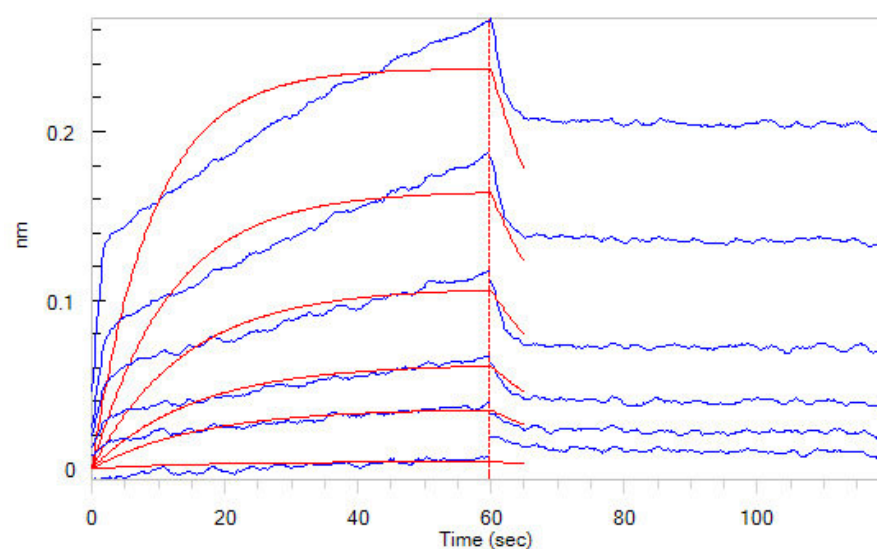
Monoclonal Anti-Human CD47 Antibody, Human IgG4 Conc. (µg/mL)

Serial dilutions of Anti-Human CD47 Neutralizing Antibody were added into Human SIRP alpha, His Tag (Cat. No. [SIA-H5225](#)): Biotinylated Human CD47, Fc,Avitag (Cat. No. [CD7-H82F6](#)) binding reactions. The half maximal inhibitory concentration (IC50) is 0.1245 µg/mL (Routinely tested).

**Bioactivity-BLI**

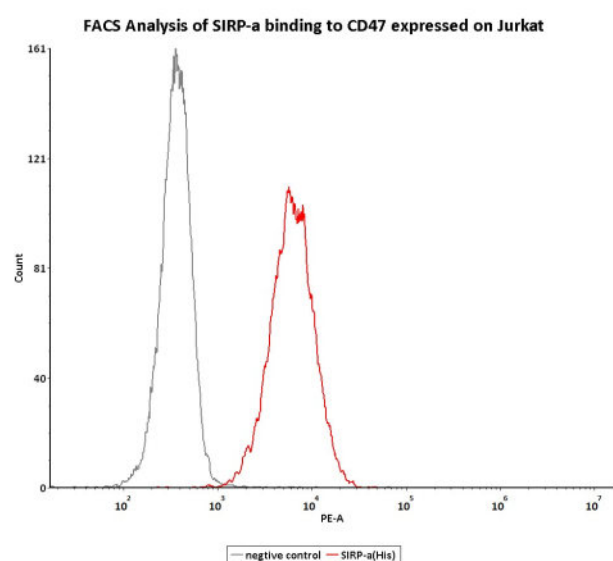


Loaded Human CD47, Mouse IgG2a Fc Tag, low endotoxin (Cat. No. CD7-H52A5) on Protein A Biosensor, can bind Human SIRP alpha, His Tag (Cat. No. SIA-H5225) with an affinity constant of 1.1 µM as determined in BLI assay (ForteBio Octet Red96e) (QC tested).

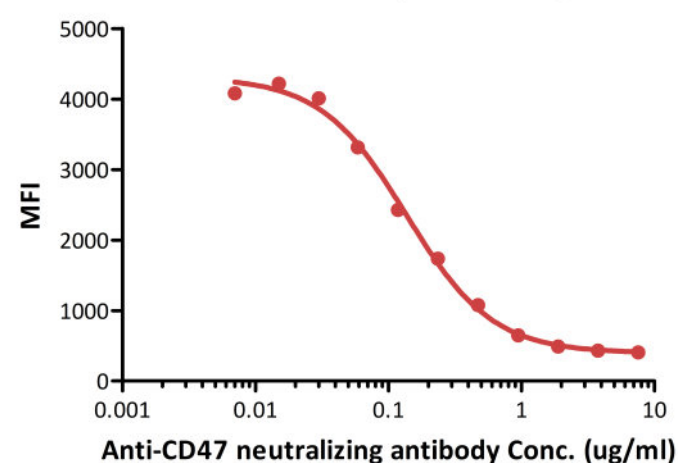


Immobilized Human CD47, Fc Tag (Cat. No. CD7-H5256) on AHC Biosensor, can bind Human SIRP alpha, His Tag (Cat. No. SIA-H5225) with an affinity constant of 0.72 µM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

**Bioactivity-FACS**



Competitive experiment of neutralizing Human SIRP alpha, His Tag



FACS assay shows that Human SIRP alpha, His Tag (Cat. No. SIA-H5225) can bind to Jurkat cell expressing CD47. The concentration of SIRP alpha used is 1 µg/mL (Routinely tested).

FACS analysis shows that the binding of Human SIRP alpha, His Tag (Cat. No. SIA-H5225) to Jurkat expressing CD47 was inhibited by increasing concentration of neutralizing Anti-CD47 antibody. The concentration of SIRP alpha used is 1 µg/mL. IC50=0.2257 µg/mL (Routinely tested).

## Background

Tyrosine-protein phosphatase non-receptor type substrate 1 (SHPS1) is also known as CD172 antigen-like family member A (CD172a), Macrophage fusion receptor, MyD-1 antigen, Signal-regulatory protein alpha (SIRPA or SIRP alpha) or p84, is a member of the SIRP family, and also belongs to the immunoglobulin superfamily. SIRP alpha is Ubiquitous and highly expressed in brain. SIRPA / CD172a is immunoglobulin-like cell surface receptor for CD47 and acts as docking protein and induces translocation of PTPN6, PTPN11 and other binding partners from the cytosol to the plasma membrane. SIRPA / SHPS-1 supports adhesion of cerebellar neurons, neurite outgrowth and glial cell attachment and may play a key role in intracellular signaling during synaptogenesis and in synaptic function. By similarity, SIRPA / MyD1 involved in the negative regulation of receptor tyrosine kinase-coupled cellular responses induced by cell adhesion, growth factors or insulin and mediates negative regulation of phagocytosis, mast cell activation and dendritic cell activation. CD47 binding prevents maturation of immature dendritic cells and inhibits cytokine production by mature dendritic cells.

## Clinical and Translational Updates

Please contact us via [TechSupport@acrobiosystems.com](mailto:TechSupport@acrobiosystems.com) if you have any question on this product.