



Product Specification Sheet

S100-A1 antibody

□ Cat # S100A1-A

Rabbit anti-Mouse Protein S100-A1 antibody

SIZE: 100 µg

S100 proteins, a family of low-molecular-weight proteins found in vertebrates and characterized by two calcium-binding sites that have helix-loop-helix ("EF-hand type") conformation, are localized in the cytoplasm and/or nucleus of a wide range of cells. They are involved in the regulation of several cellular processes such as cell cycle progression and differentiation. There are at least 21 different S100 proteins. S100 has two subunits: S100-alpha (94 aa; human chromosome 1) and S100-beta (92 aa; human chromosome 21). S100A is composed of an alpha and beta chain whereas S100B is composed of two beta chains. S100-alpha and -beta chains show ~58% sequence identity and are both highly conserved among species.

S100A1, also known as S100 calcium-binding protein A1 is a protein which in humans is encoded by the S100A1 gene. S100A1 is highly expressed in cardiac and skeletal muscle and localizes to Z-discs and sarcoplasmic reticulum. S100A1 has shown promise as an effective candidate for gene therapy to treat post-myocardially infarcted cardiac tissue. S100A1 contains 4 EF-hand calcium-binding motifs in its dimerized form and can exist as either a hetero or homodimer. S100A1 acts as a Ca²⁺ signal transducer. S100A1 also acts as a cardioprotective factor to inhibit apoptosis in neonatal ventricular cardiomyocytes via activation of the ERK1/2.

Source of Antigen or Antibodies

Uniprot: P56565

Host: Rabbit

Clonality: Polyclonal

Purification: Ammonium sulfate followed by peptide affinity purification

Immunogen: 20 amino acid synthetic peptide derived from the mid region of Mouse S100-A1

Species Reactivity: Mouse, Rat, and Human

Cross reactivity: The peptide used as an immunogen exhibits 100% homology with Rat. 95% Human, Non-Human Primate, Goat, Bovine, Horse, and Chicken. 90% Dog. 85% Xenopus laevis and Danio rerio. 80% Cat

Subcellular Location: Cytoplasm

Alternative names: S-100 protein alpha chain, S-100 protein subunit alpha, S-100 calcium-binding protein A1

Recommended Secondary Antibody: Goat anti-Rabbit IgG-HRP (**ADI cat#20320**)

Negative Control: Non-immune Rabbit IgG (**ADI cat# 20009-1**).

Form & Storage of Antibodies

□ **Affinity pure IgG Solution**

Concentration: 0.5 mg/ml Volume: 200 µl
Supplied in PBS, pH 7.4 + 0.1% BSA
The antibody can be made available carrier free or conjugated to HRP, Biotin, or FITC on request

□ **Lyophilized powder**

Reconstitute powder in 200 µl distilled water to 0.5 mg/ml

Storage:

Short-term: 4°C for 1 month

Long-term: at -20°C or below in suitable aliquots after reconstitution for 1 year. Do not expose to multiple freeze/thaw cycles or store working, diluted solutions. Glycerol may be added to a final concentration of 50% and antibodies can be stored un-aliquoted at -20°C.

Recommended Usage

ELISA: Assay dependent concentration. Typically, between 0.1-2.0 µg/ml for capture/detection antibodies.

Western Blotting: 0.5-2.0 µg/ml

Predicted band size: 10.5 kDa
Observed band size: 10.5 kDa.

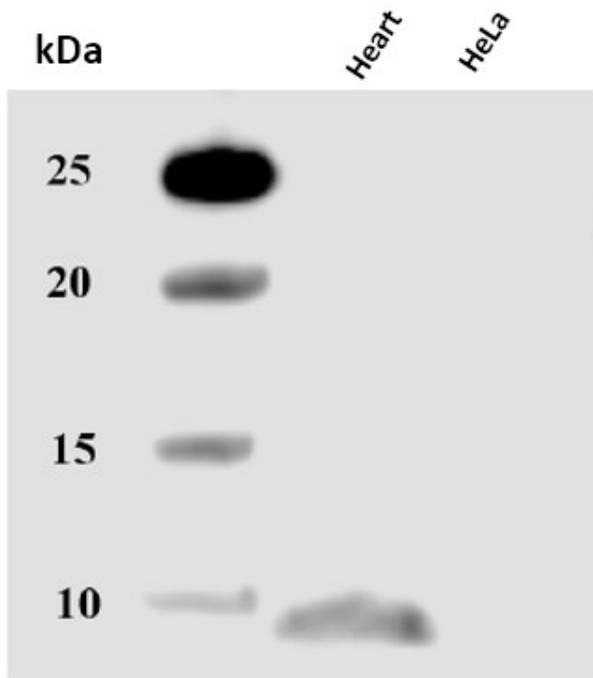
IHC-P: 1-10 µg/ml. QC tested using 10 mM sodium citrate, pH 6 antigen retrieval. The antibody may work better with other retrieval solutions or no retrieval.

The above concentrations are a *suggestion*, user's must optimize their assay based on their own conditions. The antibody may work in other applications such as Immunocytochemistry or IP. These methods have not been tested by ADI.

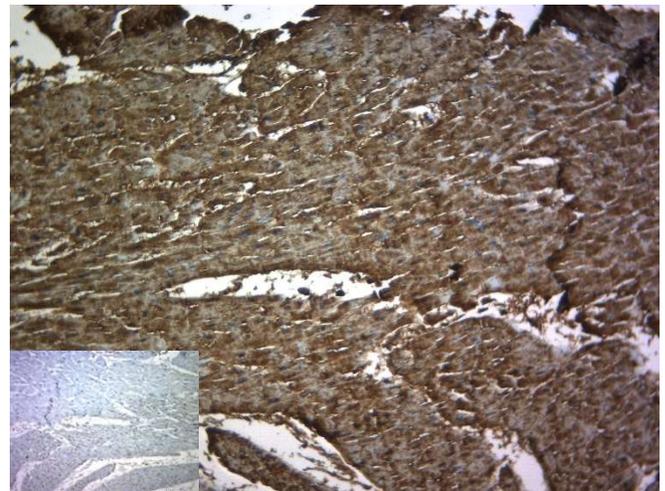
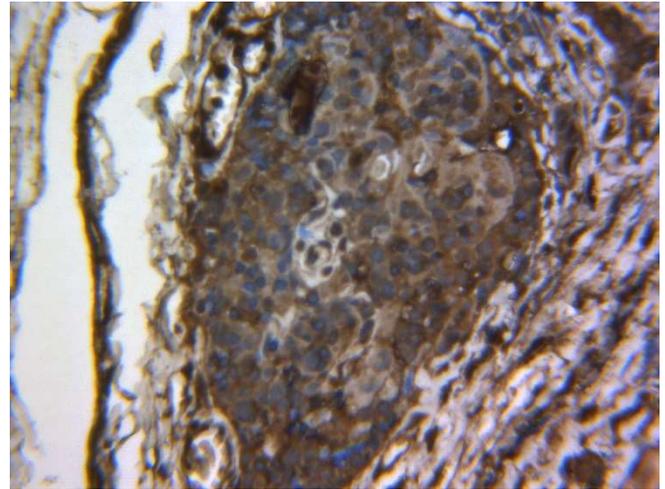
**This product is for In vitro research use only.*

Related materials available from ADI

Catalog#	Description
MAPT11-A antibody	Rabbit Anti-phospho Human TAU (Ser396)
MAPT21-A	Rabbit Anti-Mouse TAU antibody
S1001-A	Rabbit Anti-Bovine S100 IgG # 1, aff pure
S1002-R-100 Standards	Purified, Human S100 protein for ELISA or
S1005-M	Monoclonal Anti-Bovine S100 alpha ab # 2,
ascites	
S1008-M	Monoclonal Anti-Bovine S100 beta ab # 3,
ascites	
S100A1-A	192801IA



Western blotting: 20 µg of a Mouse heart and HeLa (negative control) lysate was heated for 5 minutes at 95°C then electrophoretically separated on an 'Any kD' SDS-PAGE gel (Biorad). The gel was run at 100V for ~1 hour and 30 minutes then transferred to a 0.2 µm nitrocellulose membrane using the 'Low MW' settings on a Transblot Turbo (Biorad). The blot was blocked for 1 hour at room temperature with Fish plasma (Aquablock, EastCoastBio). **S100A1-A** was diluted with TBST+0.1% BSA to 1 µg/ml and incubated overnight at 4°C. The blot was washed with TBS-T 3 times for 5 minutes each. Goat anti-rabbit IgG HRP (**ADI cat#20320**) was diluted in TBST+0.1% BSA at a 1:10,000 dilution (50 ng/ml) then incubated for 1 hour at room temperature. The blot was washed 3 times with TBS-T for 5 minutes each. The blot was then incubated with ADI Femto ECL substrate (**ADI cat#80210**) for 5 minutes and imaged on a CCD imaging system (C-DiGit, LI-COR).



Immunohistochemistry: Human Papillary Thyroid carcinoma and Human heart slides were heated for 20 minutes at 60°C then deparaffinized. Antigen retrieval was performed for 10 minutes at 95°C in a microwave using 10 mM pH 6, sodium citrate buffer. The slide was then cooled for 20 minutes at room temperature before being blocked for 30 minutes with 2.5% normal goat serum. **S100A1-A** was diluted to 5 µg/ml in TBST+0.1% BSA and incubated overnight at 4°C (Inset represents immunogen peptide absorbed antibody). The slides were then washed twice and incubated with 3% hydrogen peroxide for 10 minutes to quench endogenous peroxidase. The slide was washed then incubated with Goat anti-Rabbit IgG HRP polymer detection reagent for 30 minutes at room temperature. The slide was washed twice, incubated with DAB for 3 minutes, washed with distilled water, then counterstained for 1 minute with Gil's II Hematoxylin before being cover-slipped.