

# S100 Protein (P)

Concentrated and Prediluted Polyclonal Antibody  
901-021-092017

**BIOCARE**  
M E D I C A L

<b>Catalog Number:</b>	<b>CP 021 A, B, C</b>	<b>PP 021 AA</b>
<b>Description:</b>	0.1, 0.5, 1.0 ml, concentrated	6.0 ml, prediluted
<b>Dilution:</b>	1:100	Ready-to-use
<b>Diluent:</b>	Da Vinci Green	N/A

<b>OAI 021 T60</b>
60 test, prediluted
Ready-to-use
N/A

## Intended Use:

For In Vitro Diagnostic Use

S100 Protein (P) is a rabbit polyclonal antibody that is intended for laboratory use in the qualitative identification of S100 protein by immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical interpretation of any staining or its absence should be complemented by morphological studies using proper controls and should be evaluated within the context of the patient's clinical history and other diagnostic tests by a qualified pathologist.

## Summary and Explanation:

S100 recognizes proteins of 21-24 kDa, identified as the A and B subunits of S100 protein. S100 belongs to the family of calcium binding proteins such as calmodulin and troponin C. S100A is composed of an alpha and beta chain whereas S100B is composed of two beta chains. Antibody S100 stains Schwannomas, ependymomas, astroglomas, and almost all benign and malignant melanomas and their metastases (1-6). Studies have shown S100 protein is also expressed in the antigen presenting cells such as the Langerhan's cells in skin and interdigitating reticulum cells in the paracortex of lymph nodes. Histocytosis X can also be confirmed by S100 staining. S100 protein antibody is excellent for immunohistochemical staining of formalin-fixed, paraffin-embedded tissues. S100 protein is highly soluble and may be eluted from frozen tissue during staining.

## Principle of Procedure:

Antigen detection in tissues and cells is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. After labeling the antigen with a primary antibody, an enzyme labeled polymer is added to bind to the primary antibody. This detection of the bound antibody is evidenced by a colorimetric reaction.

**Source:** Rabbit polyclonal

**Species Reactivity:** Human, mouse and rat

**Clone:** N/A

**Isotype:** N/A

**Total Protein Concentration:** ~10 mg/ml. Call for lot specific Ig concentration.

**Epitope/Antigen:** S100 Protein

**Cellular Localization:** Cytoplasmic and nuclear

**Positive Tissue Control:** Melanoma or Schwannoma

## Known Applications:

Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

**Supplied As:** Buffer with protein carrier and preservative

## Storage and Stability:

Store at 2°C to 8°C. Do not use after expiration date printed on vial. If reagents are stored under conditions other than those specified in the package insert, they must be verified by the user. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

## Protocol Recommendations (manual use):

**Peroxide Block:** Block for 5 minutes with Biocare's Peroxidized 1.

**Pretreatment:** N/A

**Protein Block (Optional):** Incubate for 5-10 minutes at RT with Biocare's Background Punisher.

**Primary Antibody:** Incubate for 30 minutes at RT.

**Probe:** N/A

## Protocol Recommendations (manual use) Cont'd:

**Polymer:** Incubate for 30 minutes at RT with a secondary-conjugated polymer.

**Chromogen:** Incubate for 5 minutes at RT with Biocare's DAB - OR - Incubate for 5-7 minutes at RT with Biocare's Warp Red.

## Counterstain:

Counterstain with hematoxylin. Rinse with deionized water. Apply Tacha's Bluing Solution for 1 minute. Rinse with deionized water.

## Protocol Recommendations (ONCORE Automated Slide Staining System):

OAI021 is intended for use with the ONCORE Automated Slide Staining System. Refer to the ONCORE Automated Slide Staining System User Manual for specific instructions on its use. Protocol parameters in the ONCORE Automated Slide Stainer Protocol Editor should be programmed as follows:

**Protocol Name:** S100 Rb - OR - S100 Rb AP

**Protocol Template (Description):** Rb HRP Template 1 - OR - Rb AP Template 1

**Dewaxing (DS Option):** DS2

**Antigen Retrieval (AR Option):** AR2, low pH; 80°C

**Reagent Name, Time, Temp.:** S100 Rb, 30 min., 25°C

## Technical Note:

This antibody has been optimized for use with Biocare's MACH 4 Universal HRP-Polymer Detection and ONCORE HRP and AP Detections. Use TBS for washing steps.

## Limitations:

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of Biocare products. Ultimately, it is the responsibility of the investigator to determine optimal conditions. The clinical interpretation of any positive or negative staining should be evaluated within the context of clinical presentation, morphology and other histopathological criteria by a qualified pathologist. The clinical interpretation of any positive or negative staining should be complemented by morphological studies using proper positive and negative internal and external controls as well as other diagnostic tests.

## Quality Control:

Refer to CLSI Quality Standards for Design and Implementation of Immunohistochemistry Assays; Approved Guideline-Second edition (I/LA28-A2). CLSI Wayne, PA, USA (www.clsi.org). 2011.

## Precautions:

1. This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC. Sodium azide (NaN<sub>3</sub>) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for Disease Control, 1976, National Institute of Occupational Safety and Health, 1976) (7)

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### Precautions Cont'd:

2. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come in contact with sensitive areas, wash with copious amounts of water. (8)
3. Microbial contamination of reagents may result in an increase in nonspecific staining.
4. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.
5. Do not use reagent after the expiration date printed on the vial.
6. The SDS is available upon request and is located at <http://biocare.net>.

### Troubleshooting:

Follow the antibody specific protocol recommendations according to data sheet provided. If atypical results occur, contact Biocare's Technical Support at 1-800-542-2002.

### References:

1. Banerjee SS, *et al.* Malignant melanoma showing smooth muscle differentiation. *J Clin Pathol.* 1996 Nov;49(11):950-1.
2. Argenyi ZB, *et al.* S-100 protein-negative malignant melanoma: fact or fiction? A light-microscopic and immunohistochemical study. *Am J Dermatopathol.* 1994 Jun;16(3):233-40.
3. Fernando SS, Johnson S, Bate J. Immunohistochemical analysis of cutaneous malignant melanoma: comparison of S-100 protein, HMB45 monoclonal antibody and NKI/C3 monoclonal antibody. *Pathology.* 1994 Jan;26(1):16-9.
4. Tousignant J, *et al.* Immunohistochemical characteristics of malignant melanoma. A study of 40 cases and review of the literature. *Arch Anat Cytol Pathol.* 1990; 38(1-2):5-10.
5. Miettinen M, Franssila K. Immunohistochemical spectrum of malignant melanoma. The common presence of keratins. *Lab Invest.* 1989 Dec;61(6):623-8.
6. Fitzgibbons PL, *et al.* Primary mucosal malignant melanoma: an immunohistochemical study of 12 cases with comparison to cutaneous and metastatic melanomas. *Hum Pathol.* 1989 Mar;20(3):269-72.
7. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
8. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.