S100 Protein [4C4.9] (M)

Concentrated and Prediluted Monoclonal Antibody
902-3237-032621

BIOCARE MEDICAL

Available Product Formats				
Format	Catalog Number	Description	Dilution	Diluent
Concentrate	ACR 3237 A, C	0.1, 1.0 mL	1:100	Da Vinci Green
Predilute	APR 3237 AA, H	6.0, 25 mL	Ready-to-use	N/A
Q Series – For Leica BOND-III	ALR 3237 G7	7.0 mL	Ready-to-use	N/A

Intended Use:
For Research Use Only. Not for use in diagnostic procedures.
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. S100 protein is expressed in Schwannomas, ependymomas, astrogliomas, and nearly all melanomas (benign and malignant) and their metastases (1-6). Studies have also shown S100 protein is expressed in Langerhans cell tumors and interdigitating dendritic cell tumor/sarcoma (IDCT) (7). Langerhans Cell Histiocytosis (also known as histiocytosis X, eosinophilic granuloma, or Langerhans cell granulomatosis) can also be confirmed by S100 staining (8).
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, a one-, two- or three-step detection procedure can be employed. The one-step procedure will feature an enzyme-labeled polymer that binds to the primary antibody. A two-step procedure will feature a secondary antibody added to bind to the primary antibody. An enzyme-labeled polymer is then added to bind to the secondary antibody. The three-step detection procedure will feature a secondary antibody added to bind to the primary antibody followed by a linker antibody step for maximum binding. An enzyme-labeled polymer is then added to bind to the linker antibody. These detections of the bound antibodies are evidenced by a colorimetric reaction.
Source: Mouse monoclonal
Species Reactivity: Human; others not tested
Clone: 4C4.9
Isotype: IgG2a/kappa
Protein Concentration: Call for lot specific Ig concentration.
Epitope/Antigen: S100 protein
Cellular Localization: Cytoplasmic and nuclear
Positive Tissue Control: Melanoma
Known Applications:
Immunohistochemistry (formalin-fixed paraffin-embedded tissues)
Supplied As: Buffer with protein carrier and preservative
Storage and Stability:
Store at 2ºC to 8ºC. The product is stable to the expiration date printed on the label, when stored under these conditions. Do not use after expiration date. Diluted reagents should be used promptly; any remaining reagent should be stored at 2ºC to 8ºC.

Staining Protocol Recommendations (intelliPATH FLX® and manual use):
Peroxide Block: Block for 5 minutes with Peroxidazed 1.
Pretreatment: Perform heat retrieval using Diva Decloaker. Refer to the Diva Decloaker data sheet for specific instructions.
Protein Block (Optional): Incubate for 5-10 minutes at RT with Background Punisher.
Primary Antibody: Incubate for 30 minutes at RT.
Probe: Incubate for 10 minutes at RT with a secondary probe.
Polymer: Incubate for 10-20 minutes at RT with a tertiary polymer.

Staining Protocol Recommendations (intelliPATH FLX and manual use) Cont'd:
Chromogen: Incubate for 5 minutes at RT with Biocare's DAB – OR – Incubate for 5-7 minutes at RT with Warp Red.
Counterstain: Counterstain with hematoxylin. Rinse with deionized water. Apply Tacha's Bluing Solution for 1 minute. Rinse with deionized water.
Technical Note:
This antibody, for intelliPATH FLX and manual use, has been standardized with MACH 4 detection system. Use TBS for washing steps.

Staining Protocol Recommendations (Q Series – For Leica BOND-III):
ALR3237 is intended for use with the Leica BOND-III. Refer to the User Manual for specific instructions for use. Recommended protocol parameters are as follows:
- DAB Chromogen Staining Option:
Protocol Name: IHC Protocol F
Detection: Bond Polymer Refine
HIER: 20 min with ER1
Peroxide Block: 5 min
Marker (Primary Antibody): 15 min
Post Primary: 8 min
Polymer: 8 min
Mixed DAB Refine: 10 min
Hematoxylin: 5 min
- Red Chromogen Staining Option:
Protocol Name: IHC Protocol J
Detection: Bond Polymer Refine Red
HIER: 20 min with ER1
Marker (Primary Antibody): 15 min
Post Primary AP: 20 min
Polymer AP: 30 min
Mixed Red Refine: 10 min + 5 min
Hematoxylin: 5 min

Limitations:
This product is provided for Research Use Only (RUO) and is not for use in diagnostic procedures. Suitability for specific applications may vary and it is the responsibility of the end user to determine the appropriate application for its use.
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_3) 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) (9)
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

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Precautions Cont'd:
and specimens. If reagents or specimens come into contact with sensitive areas, wash with copious amounts of water. (10)
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.

Technical Support:
Contact Biocare's Technical Support at 1-800-542-2002 for questions regarding this product.

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. Pileri SA, *et al*. Tumours of histiocytes and accessory dendritic cells: an immunohistochemical approach to classification from the International Lymphoma Study Group based on 61 cases. Histopathology. 2002 Jul;41(1):1-29.
8. Redd L, *et al*. Langerhans Cell Histiocytosis Shows Distinct Cytoplasmic Expression of Major Histocompatibility Class II Antigens. J Hematop. 2016 Sep;9(3):107-112.
9. 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."
10. 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.

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