S100 Protein Cocktail

Prediluted Mouse Monoclonal Cocktail Antibody

Control Number: 901-089IP-090613

Catalog Number:	Description:
IP 089 G10	10 ml, predilute

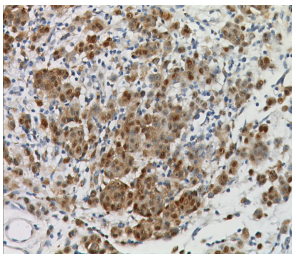
Intended Use:

For In Vitro Diagnostic Use

S100 Protein Cocktail [15E2E2 + 4C4.9] is a mouse monoclonal antibody cocktail that is intended for laboratory use in the qualitative identification of S100 proteins 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:

The S100 antibody cocktail recognizes proteins of 21-24 kDa, identified as 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 alpha and beta chains whereas S100B is composed of two beta chains. Antibody S100 stains melanocytes, schwannomas, peripheral neural tissue, astrocytes, 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 Langerhans cells in skin and interdigitating reticulum cells in the paracortex of lymph nodes. Histiocytosis X can also be confirmed by S100 staining. According to studies, the S100 monoclonal cocktail is potentially more sensitive than other S100 single clone antibodies; and thus is an excellent pan-melanoma marker. S100 protein is highly soluble and may be eluted from frozen tissue during staining.



Melanoma stained with S100 Cocktail antibody.

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 secondary antibody is added to bind to the primary antibody. An enzyme label is then added to bind to the secondary antibody; this detection of the bound antibody is evidenced by a colorimetric reaction.

Source: Mouse monoclonal

Species Reactivity: Human, mouse and rat

Clone: 15E2E2 + 4C4.9

Isotype: IgG_{2ak} + IgG_{2a}

Antibody Category: Melanoma

Epitope/Antigen: S100 Protein

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

Cellular Localization: Cytoplasmic and nuclear

Positive 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. 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.

Protocol Recommendations:

Refer to the intelliPATH Automated Slide Stainer Manual for detailed instructions on its use, including programming protocols, starting a staining run and instrument maintenance. Please contact Biocare Medical Technical Support with questions.

Pretreatment (recommended in most cases): Perform heat retrieval using Biocare's Reveal Decloaker. Refer to the Reveal Decloaker data sheet for specific instructions.

Optional: No Pretreatment (recommended for better morphology preservation in cutaneous melanomas).

Peroxide Block: Block for 5 minutes at RT.

Protein Block (Optional): Incubate for 5-10 minutes at RT.

Primary Antibody: Incubate for 30 minutes at RT if no pretreatment used. Incubate for 15 minutes at RT if heat pretreatment used.

Secondary: Incubate for 10 minutes at RT if no pretreatment used. Incubate for 5 minutes at RT if heat pretreatment used.

Tertiary: Incubate for 10 minutes at RT if no pretreatment used. Incubate for 5 minutes at RT if heat pretreatment used.

Chromogen: Incubate for 5 minutes with DAB at RT.

Counterstain:

1. Rinse with deionized water.
2. Incubate for 5 minutes with automated Hematoxylin.
3. Rinse with TBS Buffer for 1 minute followed by a rinse with deionized water.

Staining Procedure:

Biocare protocols have been standardized using in-house antibodies, detection and accessory reagents for use on the intelliPATH automated stainer. Recommended staining protocols are specified in the datasheet of the antibody of interest. Pre-optimized intelliPATH protocols with preset parameters can be displayed, printed and edited according to the procedure in the Operator's Manual. Refer to the Operator's Manual for additional instruction to navigate intelliPATH software and stainer. Use TBS for washing steps unless otherwise specified.

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_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) (7)
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 MSDS is available upon request and is located at http://biocare.net/support/msds/.

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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-Third Edition CLSI document M29-A3 Wayne, PA 2005.