

SOX10 (M)

Prediluted Monoclonal Antibody
Control Number: 901-3099VP-090314

VP Echelon™ Series

Catalog Number: AVI 3099 G
Description: 6.0 ml, prediluted
Dilution: Ready-to-use

Intended Use:

For In Vitro Diagnostic Use

SOX10 (M) [BC34] is a mouse monoclonal antibody that is intended for laboratory use in the qualitative identification of SOX10 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:

The transcription factor SRY-related HMG-Box gene 10 (SOX10) plays an important role in neural crest, peripheral nervous system, and melanocytic cell development (1-3). SOX10 is widely expressed in normal human tissues including melanocytes and breast tissue. SOX10 is also an important marker in malignant tumors such as melanoma, breast carcinoma, gliomas, and benign tumors such as schwannomas (3-6). More importantly, SOX10 has been shown to be expressed in 97-100% of desmoplastic and spindle cell melanomas and has also been shown to be expressed in 100% of nevi (1). Spindle cell and desmoplastic melanomas are rare variants of invasive cutaneous melanoma, with an annual incidence rate of approximately 2 per 100,000 (7). The majority of oligodendrogliomas and a large percentage of astrocytomas and poorly differentiated glioblastomas have also been shown to express SOX10 (3,5). PATENT PENDING.

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. The detection of the bound antibody is evidenced by a colorimetric reaction.

Source: Mouse monoclonal

Species Reactivity: Human; others not tested

Clone: BC34

Isotype: IgG1

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

Epitope/Antigen: SOX10

Cellular Localization: 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 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.

Protocol Recommendations:

Using *ultraVIEW* Detection Kit

Pretreatment Solution (recommended): CC1

Pretreatment Protocol: Standard

Primary Antibody: Incubate for 32 minutes at 37°C.

Technical Note:

Biocare's VP-Echelon Series of predilutes have been developed for use with Ventana® Medical Systems, BenchMark® XT Immunohistochemistry Staining System in combination with Ventana® Detection Kits and Ventana® Prep Kit Dispensers.

Performance Characteristics:

Nuclear staining of SOX10 [BC34] was observed in 96.4% (106/110) of cases of cutaneous melanoma and 83.9% (73/87) of cases of metastatic melanoma (Table 1). Staining of SOX10 [BC34] was also observed in spindle cell melanoma (100%, 19/19), desmoplastic melanoma (96.6%, 28/29), benign nevi (100%, 20/20) and schwannomas (100%, 28/28).

SOX10 [BC34] nuclear staining was observed in the expected normal tissues: oligodendrocytes in cerebrum and cerebellum, myoepithelial cells in breast and salivary glands, melanocytes in skin, and Schwann cells in peripheral nerve (Table 2).

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 listed are not applicable to other detection systems, as results may vary. 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 (NaN₃) 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) (8)
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 into contact with sensitive areas, wash with copious amounts of water.
3. Microbial contamination of reagents may result in an increase in nonspecific staining. (9)
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/>.

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.

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References:

1. Mohamed A, *et al.* SOX10 Expression in malignant melanoma, carcinoma, and normal tissues. *Appl Immunohistochem Mol Morphol.* 2013 Dec; 21(6):506-10.
2. Pusch C, *et al.* The SOX10/Sox10 gene from human and mouse: sequence, expression, and transactivation by the encoded HMG domain transcription factor. *Hum Genet.* 1998 Aug; 103(2):115-23.
3. Mollaaghababa R, Pavan WJ. The importance of having your SOX on: role of SOX10 in the development of neural crest-derived melanocytes and glia. *Oncogene.* 2003 May 19; 22(20):3024-34.
4. Bondurand N, *et al.* Expression of the SOX10 gene during human development. *FEBS Lett.* 1998 Aug 7; 432(3):168-72.
5. Bannykh SI, *et al.* Oligodendroglial-specific transcriptional factor SOX10 is ubiquitously expressed in human gliomas. *J Neurooncol.* 2006 Jan; 76(2):115-27.
6. Britsch S, *et al.* The transcription factor Sox10 is a key regulator of peripheral glial development. *Genes Dev.* 2001 Jan 1; 15(1):66-78.
7. Feng Z, *et al.* Incidence and survival of desmoplastic melanoma in the United States, 1992–2007. *J Cutan Pathol.* 2011 Aug; 38(8):616-24.
8. 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."
9. 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.

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Table 1: Sensitivity of mouse monoclonal antibody SOX10 [BC34] was determined by testing formalin-fixed, paraffin-embedded neoplastic tissues.

Pathology	# Positive/Total Cases
Melanoma (Cutaneous)	106/110 (96.4%)
Metastatic melanoma	73/87 (83.9%)
Spindle cell melanoma	19/19 (100%)
Desmoplastic melanoma	28/29 (96.6%)
Desmoplastic/Spindle cell mixed features	3/3 (100%)
Epithelioid melanoma	2/2 (100%)
Sarcomatoid melanoma	2/2 (100%)
Plasmacytoid melanoma	2/2 (100%)
Balloon cell melanoma	2/2 (100%)
Rhabdoid melanoma	1/1 (100%)
Benign Nevus (Various)	20/20 (100%)
Schwannoma (Neurilemmoma)	28/28 (100%)

Table 2: Specificity of mouse monoclonal antibody SOX10 [BC34] was determined by testing formalin-fixed, paraffin-embedded normal tissues.

Tissue	#Positive/Total tissues	Tissue	#Positive/Total tissues
Cerebrum	4/6*	Stomach	0/3
Cerebellum	2/3*	Small intestine	0/3
Adrenal	0/3	Colon	0/3
Ovary	0/3	Liver	0/3
Pancreas	0/3	Salivary gland	2/3*
Thyroid	0/3	Kidney	0/3
Parathyroid	0/3	Prostate	0/3
Testis	0/3	Uterus	0/3
Bone	0/3	Uterine cervix	0/3
Spleen	0/3	Skeletal muscle	0/3
Tonsil	0/3	Skin	3/3*
Thymus	0/3	Peripheral nerve	2/3*
Bone marrow	0/3	Lung	0/3
Lung	0/3	Larynx	0/3
Heart	0/3	Bladder	0/3
Esophagus	0/3	Placenta	0/3
Pituitary	0/3	Mesothelium	0/3
Breast	2/3*		

*Cerebrum and cerebellum: oligodendrocytes and some astrocytes; breast: myoepithelial cells; salivary gland: myoepithelial cells; skin: melanocytes; peripheral nerve: Schwann cells.