

SOX10 (M)

Concentrated and Prediluted Monoclonal Antibody
902-3099-073117

BIOCARE
M E D I C A L

Catalog Number:	ACR 3099 A, C	APR 3099 AA, H
Description:	0.1, 1.0 ml concentrated	6.0, 25 ml, prediluted
Dilution:	1:100	Ready-to-use

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

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. A secondary antibody may be applied to bind the primary antibody, followed by an enzyme labeled polymer; or an enzyme labeled polymer may be applied directly to bind the primary antibody. The detection of the bound primary antibody is evidenced by an enzyme-mediated 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 Tissue 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. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

Staining Protocol Recommendations:

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

Pretreatment: Perform heat retrieval using Biocare's Diva Decloaker. Refer to the Diva Decloaker product data sheet for specific instructions.

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

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.

Technical Note:

This antibody has been standardized with Biocare's MACH 4 detection system. Use TBS buffer for washing steps.

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:

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 (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 in contact with sensitive areas, wash with copious amounts of water. (9)

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>.

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.



60 Berry Drive
Pacheco, CA 94553

USA

Rev: 062117

Tel: 800-799-9499 | www.biocare.net | Fax: 925-603-8080

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References Cont'd:

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.

Table 1: Sensitivity and specificity 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: Tissue cross-reactivity 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.