

# Microphthalmia Transcription Factor (MiTF)

Concentrated and Prediluted Monoclonal Antibody  
902-423-110917

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

<b>Catalog Number:</b>	<b>ACR 423 BK</b>	<b>APR 423 AA</b>
<b>Description:</b>	0.5 ml, concentrated	6.0 ml, prediluted
<b>Dilution:</b>	1:25	Ready-to-use
<b>Diluent:</b>	Renoir Red	N/A

## Intended Use:

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

## Summary and Explanation:

Microphthalmia transcription factor (MiTF) was recently cloned as the human homolog of the mouse microphthalmia (mi) gene product. The mi phenotype is associated with a mutant mi locus and characterized by small eyes and loss of melanin pigments. MiTF is the only nuclear melanocytic marker and is a sensitive and specific marker for malignant melanoma, including some spindle-cell variants, in cytologic specimens, and may be superior to the current standard melanocytic markers, S100 protein and HMB45 antigen. MiTF may be very valuable for the diagnosis of melanoma, including desmoplastic variants; melanocytic soft tissue tumors, such as clear cell sarcoma; and the unusual group of tumors that show combined melanocytic and myoid differentiation, the perivascular epithelioid cell family of tumors (PEComas). Microphthalmia transcription factor may be a valuable addition to the marker panel used in diagnosing melanoma, in combination with S100, HMB45, Tyrosinase and MART-1.

## 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; others not tested

**Clone:** 34CA5

**Isotype:** IgG1/kappa

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

**Epitope/Antigen:** Human MiTF

**Cellular Localization:** Nuclear

**Positive Tissue Control:** Melanoma

## Known Applications:

Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

**Supplied As:** Buffer with protein carrier and preservative  
Renoir Red (BRR904)

## 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 data sheet for specific instructions.

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

**Primary Antibody:** Incubate for 30-60 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.

## 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 (Na<sub>3</sub>N) 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) (6)

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. (7)

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. Ohsie SJ, *et al.* Immunohistochemical characteristics of melanoma. *J Cutan Pathol.* 2008 May; 35(5):433-44.
2. Sheffield MV, *et al.* Comparison of five antibodies as markers in the diagnosis of melanoma in cytologic preparations. *Am J Clin Pathol.* 2002 Dec; 118(6):930-6.
3. Dorvault CC, *et al.* Microphthalmia transcription factor: a sensitive and specific marker for malignant melanoma in cytologic specimens. *Cancer.* 2001 Oct 25; 93 (5):337-43.
4. O'Reilly FM, *et al.* Microphthalmia transcription factor immunohistochemistry: a useful diagnostic marker in the diagnosis and detection of cutaneous melanoma, sentinel lymph node metastases, and extracutaneous melanocytic neoplasms. *J Am Acad Dermatol.* 2001 Sep; 45(3):414-9.
5. Miettinen M, *et al.* Microphthalmia transcription factor in the immunohistochemical diagnosis of metastatic melanoma: comparison with four other melanoma markers. *Am J Surg Pathol.* 2001 Feb; 25(2):205-11.
6. 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."
7. 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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