



# Actin, Muscle-Specific

*IHC of Actin, Muscle-Specific on an FFPE Skeletal Muscle Tissue*

**Intended Use** For In Vitro Diagnostic Use

**Summary and Explanation** Actin is a globular-structural, 345 kDa protein that polymerizes in a helical fashion to form an actin filament (or microfilament). Actin filaments provide mechanical support for the cell, determine the cell shape, enable cell movements (through lamellipodia, filopodia, or pseudopodia); and participate in certain cell junctions, in cytoplasmic streaming and in contraction of the cell during cytokinesis. In muscle cells they play an essential role, along with myosin, in muscle contraction. In the cytosol, actin is predominantly bound to ATP, but can also bind to ADP.

This antibody recognizes actin of skeletal, cardiac, and smooth-muscle cells. It is not reactive with other mesenchymal cells except for myoepithelium. Muscle-Specific Actin recognizes alpha and gamma isotypes of all muscle groups. Non-muscle cells such as vascular endothelial cells and connective tissues are non-reactive. Neoplastic cells of non-muscle-derived tissue such as Carcinomas, Melanomas and Lymphomas are negative. This antibody is useful in the identification of rhabdoid cellular elements.

<b>Antibody Type</b>	Mouse Monoclonal	<b>Clone</b>	HHF-35
<b>Isotype</b>	IgG1/K	<b>Reactivity</b>	Paraffin, Frozen
<b>Localization</b>	Cytoplasmic	<b>Control</b>	Skeletal Muscle

**Presentation** Actin, Muscle Specific is a mouse monoclonal antibody derived from cell culture supernatant that is concentrated, dialyzed, filter sterilized and diluted in buffer pH 7.5, containing BSA and sodium azide as a preservative.

Availability	Catalog No.	Antibody Type	Dilution	Volume/QTY
	BSB 5022	Prediluted	Ready-To-Use	3.0 ml
	BSB 5023	Prediluted	Ready-To-Use	7.0 ml
	BSB 5024	Prediluted	Ready-To-Use	15.0 ml
	BSB 5025	Concentrated	1:25-1:100	0.1 ml
	BSB 5026	Concentrated	1:25-1:100	0.5 ml
	BSB 5027	Concentrated	1:25-1:100	1.0 ml
	BSB 5028	Control Slides		5

**Note:** For concentrated antibodies, please centrifuge prior to use to ensure recovery of all product.

**Storage** Store at 2°-8°C

**Stability** 3 years

For long-term storage of the concentrated antibody, it is recommended that aliquots of the antibody be frozen at -20°C in glycerol 50% (frost-free freezers are not recommended). Repeated freezing and thawing must be avoided. Dilute using an antibody diluent such as **ImmunoDetector Protein Block/Antibody Diluent** (BSB 0040 and BSB 0041) or **ImmunoDNA Background Blocker** (BSB 0103-BSB 0107).



The sodium azide (NaN<sub>3</sub>) used as a preservative, is toxic if ingested.

**Protocol** Suggested protocol on reverse

## Recommended Immunohistochemical Protocol

- Pretreatment**
1. Cut and mount 3-4 micron formalin-fixed paraffin-embedded tissues on positive charged slides.
  2. Air dry for 2 hours at 58° C.
  3. Deparaffinize, dehydrate and rehydrate tissues.
  4. Subject tissues to heat epitope retrieval using a suitable retrieval solution such as **ImmunoDNA Retriever with Citrate** (BSB 0020-BSB 0023) or **EDTA** (BSB 0030-BSB 0033).
  5. Any of three heating methods may be used:
    - a. **Electric Pressure Cooker**  
Place standoff rack at base of pressure cooker. Add 1-2 inches of distilled water to the pressure cooker and turn heat to high, and incubate for 15 minutes. Open and immediately transfer slides to room temperature.
    - b. **Water Bath Method**  
Place tissues/slides in a pre-warmed staining dish or coplin jar containing the **ImmunoDNA Retriever with Citrate** or **EDTA** in a water bath set at 95°-99° C. Incubate for 30-60 minutes.
    - c. **Conventional Steamer Method**  
Place tissues/slides in a pre-warmed staining dish or coplin jar containing the **ImmunoDNA Retriever with Citrate** or **EDTA** in a Steamer, cover and steam for 30-60 minutes.
  6. After heat treatment, transfer slides in **ImmunoDNA Retriever with Citrate** or **EDTA** to room temperature and let stand for 15-20 minutes.
  7. Wash slides with IHC wash buffer or DI water.
  8. Continue IHC staining protocol.

## Immunohistochemical Protocol

Step	ImmunoDetector (AP or HRP)	PolyDetector (AP or HRP)
Peroxidase/AP Blocker	5 minutes	5 minutes
Primary Antibody	30 minutes	45 minutes
Secondary Biotinylated Link	10 minutes	Not Applicable
AP or HRP Label	10 minutes	45 minutes
Substrate-Chromogen	5-10 minutes	10 minutes
Counterstaining	Time varies with counterstain	Time varies with counterstain

**Limitations** Actin, Muscle-Specific antibody, when used as directed, detects antigens that survive routine formalin fixation, tissue processing and sectioning. Users who deviate from recommended test procedures are responsible for interpretation and validation of patient results

- References**
1. Gown, et al. *A. J. P.* 1986;125:191
  2. Schmidt R., et al. *A. J. P.* 1988;131:199
  3. Azumi N, et al. *Modern Pathology.* 1988,1:469-474
  4. Rangdaeng L, et al. *Am J Clin Pathology.* 1991;96:32-45
  5. Schmidt R, Cone R, Haas J, Gown A, *Amer J Pathol.* 1988;131:19



69 Santa Felicia Dr., Santa Barbara, CA 93117, USA  
 Tel: (805) 692-2768 | Tel: (800) 561-1145 | Fax: (805) 692-2769  
 E-mail: info@biosb.com | Website: www.biosb.com