



## RayBiotech, Inc.

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### Certificate of Analysis and Data Sheet

## MOUSE ANTI HUMAN F-ACTIN

With HRP secondary conjugated antibody

**Catalog No.**  
DS-MB-00020

**Species**  
Human

**Isotype**  
Mouse IgM

**Accession No**  
multiple actin genes

### Description

Actin is a globular, 42-47 kDa, structural protein found in eukaryotic cells. Actin has two main functions in cells. In all cells it forms the thinnest part of the cytoskeleton, which allows motility, while in muscle cells it also associates with myosin proteins to form the contractile apparatus. Individual subunits of actin are known as globular actin (G-actin). G-actin subunits assemble into long filamentous polymers called F-actin. Because it interacts with a large number of other proteins, actin is one of the most highly conserved throughout evolution. Mammals have at least six actin isoforms coded by separate genes, which are divided into three classes (alpha, beta and gamma) according to their isoelectric point. Alpha actins are generally found in muscle, whereas beta and gamma isoforms are prominent in non-muscle cells. Although there are small differences in sequence and properties between the isoforms, all actins assemble into microfilaments and are essentially identical in the majority of tests performed in vitro.

### Applications

**Table Summary of antibody applications and working conditions**

<b>Options</b> <b>Functions</b>	<b>YES</b>	<b>NO</b>	<b>Not determined</b>	<b>Recommended Work dilution or concentration</b>
ELISA	•			1:10
Western Blotting	•			1:100 – 1:500
Immunohistology - frozen	•			
Immunoprecipitation			•	
Flow Cytometry	•			1:10
Immunofluorescence staining			•	

**Note:** Other applications are not tested yet. Optimal dilutions should be determined by each laboratory for each application.

**The products are furnished for LABORATORY RESEARCH USE ONLY.**  
**Not for diagnostic or therapeutic use.**



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### Preparation

Immunogen was purified F-actin from human from human monocytes and U937 cell lines. Spleen cells from immunized BALB/c mice were fused with cells of the mouse NS1 myeloma cell line.

### Specificity

This antibody recognizes human filamentous actin (F-actin). The antibody binds to the N-terminal region of actin, but not to the extreme N-terminal 40 amino acids. In tissue sections the antibody stains the cytoplasm of macrophages strongly, and gives granular, localized nuclear staining of all cell types. Cross-reacts with rabbit F-actin

### Reconstitution

Antibody is supplied as 500 mg purified IgM in phosphate-buffered saline pH 7.4, with 0.09% sodium azide. Its final concentration is 1.0 mg/mL.

### Secondary Antibody Applications

Options Functions	YES	NO	Not determined	Recommended Work dilution or concentration
Immunoassay (ELISA, Western blot)	•			1:5000-1:10000

### Storage

If not intended for use within a month, store at -20°C. Otherwise, keep it at 4 °C and minimize freezing and thawing when use. Should this product contain a precipitate we recommend microcentrifugation before use. Stable for 18 months.

**Please avoid freeze-thaw cycles.**

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### **Reference**

- 1) Vandekerckhove J. and Weber K. (1978) At least six different actins are expressed in a higher mammal: an analysis based on the amino acid sequence of the amino-terminal tryptic peptide. *J Mol Biol.* 126:783–80
- 2) Holmes KC, Popp D, Gebhard W, Kabsch W. (1990) Atomic model of the actin filament. *Nature*, 347, 21-2.
- 3) Bárány, M., Barron, J.T., Gu, L., and Bárány, K. (2001) Exchange of the actin-bound nucleotide in intact arterial smooth muscle. *J. Biol. Chem.*, 276, 48398-48403.

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