**β-Actin (8H10D10) Mouse mAb**

For Research Use Only. Not For Use In Diagnostic Procedures.

![Image](https://example.com/image.png)

**Applications**
- Western (W), Immunoprecipitation (IP), Immunohistochemistry (IF), Immunofluorescence (IC), Flow Cytometry (F)
- Endogenous

**Species Cross-Reactivity**
- Mouse (M), Rat (R), Human (H), Monkey (Mk), Hamster (Hm), Dog (Dg)

**Molecular Wt.**
- 45 kDa

**Isotype**
- Mouse IgG2b (**

**Background:**
Actin, a ubiquitous eukaryotic protein, is the major component of the cytoskeleton. At least six isoforms are known in mammals. Nonmuscle β- and γ-actin, also known as cytoplasmic actin, are predominantly expressed in nonmuscle cells, controlling cell structure and motility (1). α-cardiac and α-skeletal actin are expressed in striated cardiac and skeletal muscles, respectively; two smooth muscle actins, αS- and γ-actin, are found primarily in vascular smooth muscle and enteric smooth muscle, respectively. These actin isoforms regulate contractile potentials for muscle cells (1). Actin exists mainly as a fibrous polymer, F-actin. In response to cytoskeletal reorganizing signals during processes such as cytokinesis, endocytosis, or stress, cofilin promotes fragmentation and depolymerization of F-actin, resulting in an increase in the monomeric globular form, G-actin (2). The Arp2/3 complex stabilizes F-actin fragments and promotes formation of new actin filaments (2). It has been reported that actin is hyperphosphorylated in primary breast tumors (3). Cleavage of actin under apoptotic conditions has been observed in vitro and in cardiac and skeletal muscle (4-6). Actin cleavage by caspase-3 may accelerate ubiquitin/proteosome dependent muscle proteolysis (6).

**Specificity/Sensitivity:**
- β-Actin (8H10D10) Mouse mAb detects endogenous levels of total β-actin protein.

**Source/Purification:**
- Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to amino-terminal residues of human β-actin.

**Recommended Antibody Dilutions:**
- Western blotting: 1:1,000
- Immunohistochemistry (Paraffin): 1:8,000-1:32,000
  - Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.
- Unmasking buffer: Citrate Antigen Unmasking Buffer (HRP, Mouse) #8125
- Immunofluorescence (IF-IC): 1:2,500-1:10,000
- IF Protocol: Methanol Permeabilization
- Flow Cytometry: 1:200-1:800

**Recommended Companion Products:**
- Please visit www.cellsignal.com for a complete listing of additional recommended products.

**Storage:**
- Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at −20°C. Do not aliquot the antibody.

**Species Cross-reactivity is determined by western blot.**

**Anti-mouse secondary antibodies must be used to detect this antibody.**

**IMPORTANT:** For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

**Applications Key:**
- W—Western
- IP—Immunoprecipitation
- IF—Immunofluorescence
- IHC—Immunohistochemistry
- ChIP—Chromatin Immunoprecipitation
- F—Flow cytometry
- E—ELISA-Peptide

**Species Cross-Reactivity Key:**
- H—Human
- M—Mouse
- R—Rat
- Hm—Hamster
- Mk—Monkey
- Bm—Bovine
- C—Chicken
- Dm—D. melanogaster
- X—Xenopus
- G—Gallus
- S. cerevisiae
- C. elegans
- H—Horse
- A—All species expected

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**Swiss-Prot Acc. #:60**

**Entrez Gene ID:**

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Immunohistochemical analysis of paraffin-embedded human breast carcinoma using β-Actin (8H10D10) Mouse mAb.

Immunohistochemical analysis of paraffin-embedded human heart using β-Actin (8H10D10) Mouse mAb. Note the lack of staining of cardiac muscle.

Flow cytometric analysis of HeLa cells using β-Actin (8H10D10) Mouse mAb (solid line) compared to concentration-matched Mouse (G3A1) mAb IgG1 Isotype Control #5415 (dashed line). Anti-mouse IgG (H+L), F(ab')₂ Fragment (Alexa Fluor® 488 Conjugate) #4408 was used as a secondary antibody.