#12262 Store at -20°C

β-Actin (8H10D10) Mouse mAb (HRP Conjugate)

Cell Signaling TECHNOLOGY®

Orders ■ 877-616-CELL (2355)
orders@cellsignal.com
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info@cellsignal.com
Web ■ www.cellsignal.com

rev. 05/16/16

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Entrez-Gene ID #60
Swiss-Prot Acc. #P60709

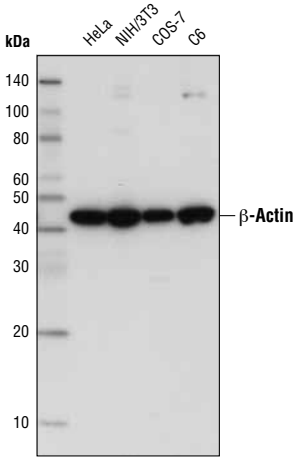
Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W Endogenous	H, M, R, Hm, Mk, Dg	45 kDa	Mouse IgG2b

Description: This Cell Signaling Technology antibody is conjugated to the carbohydrate groups of horseradish peroxidase (HRP) via its amine groups. The HRP conjugated antibody is expected to exhibit the same species cross-reactivity as the unconjugated β-Actin (8H10D10) Mouse mAb #3700.

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, α- and γ-actin, are found primarily in vascular smooth muscle and enteric smooth muscle, respectively. These actin isoforms regulate the contractile potential of 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). Research studies have shown 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, as shown in research studies (4-6). Actin cleavage by caspase-3 may accelerate ubiquitin/proteasome-dependent muscle proteolysis (6).

Specificity/Sensitivity: β-Actin (8H10D10) Mouse mAb (HRP Conjugate) recognizes 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 protein.



Western blot analysis of extracts from various cell lines using β-Actin (8H10D10) Mouse mAb (HRP Conjugate).

Storage: Supplied in 136 mM NaCl, 2.6 mM KCl, 12 mM sodium phosphate (pH 7.4) dibasic, 2 mg/ml BSA, and 50% glycerol. *Store at –20°C. Do not aliquot the antibody.*

***Species cross-reactivity other than human is determined by western blot using the unconjugated antibody.**

HRP-conjugated antibodies do not require incubation with a secondary antibody.

Recommended Antibody Dilutions:

Western blotting	1:1000

For product specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended complementary products.

Background References:

(1) Herman, I.M. (1993) *Curr. Opin. Cell Biol.* 5, 48-55.
(2) Condeelis, J. (2001) *Trends Cell Biol.* 11, 288-293.
(3) Lim, Y.P. et al. (2004) *Clin. Cancer Res.* 10, 3980-3987.
(4) Kayalar, C. et al. (1996) *Proc. Natl. Acad. Sci. USA.* 93, 2234-2238.
(5) Communal, C. et al. (2002) *Proc. Natl. Acad. Sci. USA.* 99, 6252-6256.
(6) Du, J. et al. (2004) *J. Clin. Invest.* 113, 115-123.

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 **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.