Store at -20°C

#4967

β-Actin Antibody

Cell Signaling TECHNOLOGY®

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

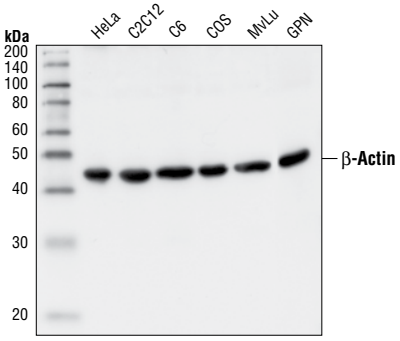
Entrez-Gene ID #60
Swiss-Prot Acc. #P60709

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R, Mk, Mi, Hm, B, Dm, Z, Dg, (Pg, C, X, Hr)	45 kDa	Rabbit**

Background: Actin, a ubiquitous protein in eukaryotes, 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, controling 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 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 Antibody detects endogenous levels of β-actin. This antibody may cross-react with the γ-actin (cytoplasmic) isoform. It does not cross-react with α-skeletal, α-cardiac, α-vascular smooth, or γ-enteric smooth muscle isoforms.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to amino-terminal residues of human β-actin. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from HeLa, C2C12, C6, COS, MvLu cells and guinea pig neutrophils (GPN) using β-Actin Antibody.

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.

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

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

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

Recommended Antibody Dilutions:

Western Blotting	1:1000

For application 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 companion products.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 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**—Hr **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.