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β-Actin (13E5) Rabbit mAb (HRP Conjugate)



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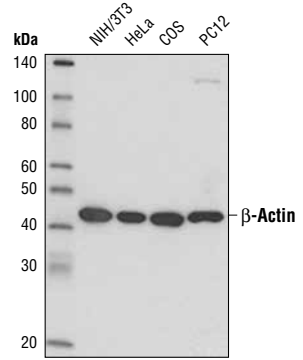
Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W Endogenous	H, M, R, Mk, Pg, B, (C,Hr)	45 kDa	Rabbit IgG

Description: This Cell Signaling Technology (CST) 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 antibody (β-Actin (13E5) Rabbit mAb #4970).

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). 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/proteasome dependent muscle proteolysis (6).

Specificity/Sensitivity: β-Actin (13E5) Rabbit mAb (HRP Conjugate) detects endogenous levels of total β-actin protein. This antibody may cross-react with γ-actin (cytoplasmic isoform). It does not cross-react with α-skeletal, α-cardiac, α-vascular smooth muscle, or γ-enteric smooth muscle isoforms.

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



Western blot analysis of extracts from various cell lines using β-Actin (13E5) Rabbit mAb (HRP Conjugate).

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

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 using the unconjugated antibody.**

HRP conjugated antibodies do not require incubation with a secondary 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.

- 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 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—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.

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