Store at –20°C

#1025

β-Actin Blocking Peptide

☑ 100 µg

Cell Signaling TECHNOLOGY®

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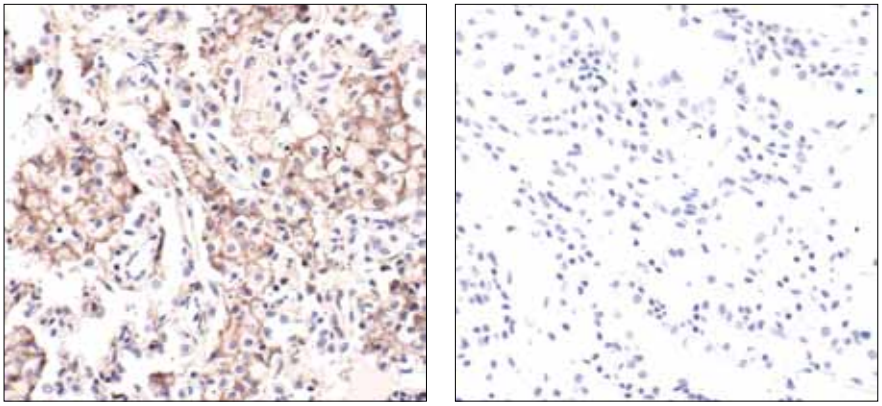
Entrez-Gene ID #60
Swiss-Prot Acc. #P60709



Immunohistochemical analysis of paraffin-embedded human lung carcinoma, using β-Actin (13E5) Rabbit mAb (#4970) in the presence of control peptide (left) or β-Actin Blocking Peptide (right).

Background: Actin, a ubiquitous protein in eukaryotes, is the major component of the cytoskeleton. At least six isoforms are know 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).

Description: This peptide is used to specifically block β-Actin (13E5) Rabbit mAb #4970 by immunohistochemistry.

Quality Control: The quality of the peptide was evaluated by reversed-phase HPLC and by mass spectrometry. The peptide blocks β-Actin (13E5) Rabbit mAb #4970 by immunohistochemistry.

Applications: Use as a blocking reagent to evaluate the specificity of antibody reactivity in immunohistochemistry protocols.

Directions for Use: For immunohistochemistry, add twice the volume of peptide as volume of antibody used in 100 ul total volume. Incubate for a minimum of 30 minutes prior to adding the entire volume to the slide. Recommended antibody dilutions can be found on the product data sheet.

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 20 mM potassium phosphate (pH 7.0), 50 mM NaCl, 0.1 mM EDTA, 1 mg/ml BSA and 5% glycerol. Store at –20°C.

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.

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.