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p44/42 MAPK (Erk1/2) Blocking Peptide (#4695 Specific)

☑ 100 µg

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Description: This peptide is used to block p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb #4695 reactivity.

Background: Mitogen-activated protein kinases (MAPKs) are a widely conserved family of serine/threonine protein kinases involved in many cellular programs, such as cell proliferation, differentiation, motility, and death. The p44/42 MAPK (Erk1/2) signaling pathway can be activated in response to a diverse range of extracellular stimuli including mitogens, growth factors, and cytokines (1-3), and research investigators consider it an important target in the diagnosis and treatment of cancer (4). Upon stimulation, a sequential three-part protein kinase cascade is initiated, consisting of a MAP kinase kinase kinase (MAPKKK or MAP3K), a MAP kinase kinase (MAPKK or MAP2K), and a MAP kinase (MAPK). Multiple p44/42 MAP3Ks have been identified, including members of the Raf family, as well as Mos and Tpl2/COT. MEK1 and MEK2 are the primary MAPKKs in this pathway (5,6). MEK1 and MEK2 activate p44 and p42 through phosphorylation of activation loop residues Thr202/Tyr204 and Thr185/Tyr187, respectively. Several downstream targets of p44/42 have been identified, including p90RSK (7) and the transcription factor Elk-1 (8,9). p44/42 are negatively regulated by a family of dual-specificity (Thr/Tyr) MAPK phosphatases, known as DUSPs or MKPs (10), along with MEK inhibitors, such as U0126 and PD98059.

Quality Control: The quality of the peptide was evaluated by reversed-phase HPLC and by mass spectrometry. The peptide detects p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb #4695 by peptide dot blot.

Directions for Use: Use as a blocking reagent to evaluate the specificity of antibody reactivity in peptide dot blot protocols.

Background References:

(1) Roux, P.P. and Blenis, J. (2004) *Microbiol Mol Biol Rev* 68, 320–44.

(2) Baccarini, M. (2005) *FEBS Lett* 579, 3271–7.

(3) Meloche, S. and Pouysségur, J. (2007) *Oncogene* 26, 3227–39.

(4) Roberts, P.J. and Der, C.J. (2007) *Oncogene* 26, 3291–310.

(5) Rubinfeld, H. and Seger, R. (2005) *Mol Biotechnol* 31, 151–74.

(6) Murphy, L.O. and Blenis, J. (2006) *Trends Biochem Sci* 31, 268–75.

(7) Dalby, K.N. et al. (1998) *J Biol Chem* 273, 1496–505.

(8) Marais, R. et al. (1993) *Cell* 73, 381–93.

(9) Kortenjann, M. et al. (1994) *Mol Cell Biol* 14, 4815–24.

(10) Owens, D.M. and Keyse, S.M. (2007) *Oncogene* 26, 3203–13.

Entrez-Gene ID #5595, 5594
UniProt ID # P27361, P28482

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

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 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.