

# Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb

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- Small 200 µl (40 western blots)
- Large 600 µl (120 western blots)

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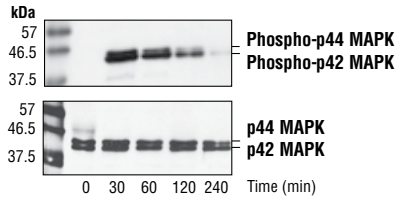
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Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, F Endogenous	H, M, R, Mk, Mi, Pg, Hm, B, Dm, Z	42, 44 kDa	Mouse IgG1**

**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 is 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.

**Specificity/Sensitivity:** Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb detects endogenous levels of p44 and p42 MAP Kinase (Erk1 and Erk2) when dually phosphorylated at Thr202 and Tyr204 of Erk1 (Thr185 and Tyr187 of Erk2), and singly phosphorylated at Tyr204. This antibody does not cross-react with the corresponding phosphorylated residues of either SAPK/JNK or p38 MAP kinase. This antibody may cross-react with an unknown cytoskeletal protein in some cell lines as visualized by immunofluorescence.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic phospho-peptide (KLH-coupled) corresponding to residues surrounding Thr202/Tyr204 of human p44 MAP kinase.



Western blot analysis of extracts from FGF treated SK-N-MC cells, using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb (upper) or control p44/42 MAPK (Erk1/2) Antibody #9102 (lower).

**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 Pouyssegur, 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.

Flow cytometric analysis of Jurkat cells, untreated (red) or PMA-treated (blue); and untreated (green) or PMA-treated (purple) following 90-minute CIP treatment, using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb.

Entrez-Gene ID #5595, 5594  
Swiss-Prot Acc. #P27361, P28482

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

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

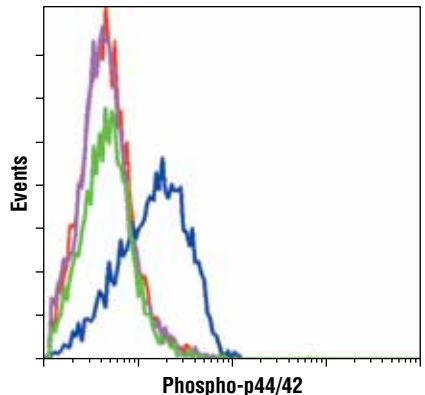
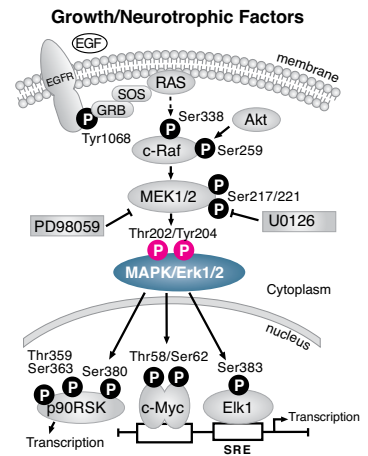
\*\*Anti-mouse secondary antibodies must be used to detect this antibody.

**Recommended Antibody Dilutions:**

Western Blotting	1:2000
Immunoprecipitation	1:50
Flow Cytometry	1:2000

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

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