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#9109

Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb (Sepharose® Bead Conjugate)

For Research Use Only. Not for Use in Diagnostic Procedures.

Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
H M R Hm Mk Mi Z B Pg	Endogenous	42, 44	Mouse IgG2a	#P27361, #P28482	5595, 5594

Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol. Store at -20°C. Do not aliquot the antibodies.
Specificity/Sensitivity	Immobilized Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) Mouse mAb binds only p44/42 MAP kinase activated by phosphorylation at Thr202/Tyr204. It is useful for immunoprecipitation kinase assays. The antibody does not significantly cross-react with SAPK/JNK or p38 MAP kinase phosphorylated at the corresponding residue or with nonphosphorylated MAPK.
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues around Thr202/Tyr204 of human p44 MAPK. Antibodies are immobilized by conjugation of carbohydrates to cross-linked agarose hydrazide beads.
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.
Background References	<ol style="list-style-type: none"> 1. Roux, P.P. and Blenis, J. (2004) <i>Microbiol Mol Biol Rev</i> 68, 320-44. 2. Baccarini, M. (2005) <i>FEBS Lett</i> 579, 3271-7. 3. Meloche, S. and Pouyssegur, J. (2007) <i>Oncogene</i> 26, 3227-39. 4. Roberts, P.J. and Der, C.J. (2007) <i>Oncogene</i> 26, 3291-310. 5. Rubinfeld, H. and Seger, R. (2005) <i>Mol Biotechnol</i> 31, 151-74. 6. Murphy, L.O. and Blenis, J. (2006) <i>Trends Biochem Sci</i> 31, 268-75. 7. Dalby, K.N. et al. (1998) <i>J Biol Chem</i> 273, 1496-505. 8. Marais, R. et al. (1993) <i>Cell</i> 73, 381-93. 9. Kortenjann, M. et al. (1994) <i>Mol Cell Biol</i> 14, 4815-24. 10. Owens, D.M. and Keyse, S.M. (2007) <i>Oncogene</i> 26, 3203-13.

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Cross-Reactivity Key	H: Human M: Mouse R: Rat Hm: Hamster Mk: Monkey Mi: Mink Z: Zebrafish B: Bovine Pg: Pig
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