

Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb (Alexa Fluor® 488 Conjugate)

✓ 100 µl
(50 tests)

New more concentrated formulation

rev. 12/07/09

This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

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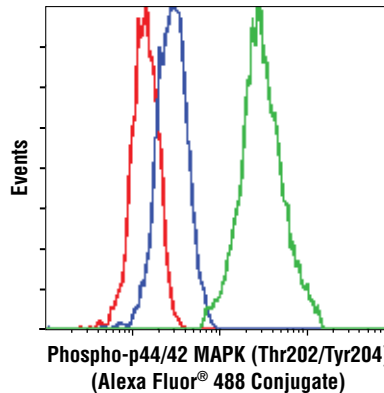
Applications	Species Cross-Reactivity*	Isotype
F Endogenous	H, M, R, Mk, Mi, Pg, Hm, B, Dm, Z	Mouse IgG1

Description: This Cell Signaling Technology antibody is conjugated to Alexa Fluor® 488 fluorescent dye and tested in-house for direct flow cytometric analysis of human and mouse cells. The unconjugated antibody #9106 reacts with human, mouse, rat, monkey, mink, pig, hamster, bovine, D. melanogaster and zebrafish phospho p44/p42 protein. CST expects that Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb (Alexa Fluor® 488 Conjugate) will also recognize p44/42 MAPK in these species.

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 (Alexa Fluor® 488 Conjugate) detects endogenous levels of p44 and p42 MAP kinase (Erk1 and Erk2) when dually phosphorylated at Thr202 and Tyr204. This antibody does not cross-react with the corresponding phosphorylated residues of either SAPK/JNK or p38 MAP kinase.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide (KLH-coupled) corresponding to residues surrounding Thr202/Tyr204 of human p44 MAP kinase. The antibody was conjugated to Alexa Fluor® 488 under optimal conditions with an F/P ratio of 2-6.



Flow cytometric analysis of Jurkat cells, U0126-treated (blue) or PMA-treated (green), using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb (Alexa Fluor® 488 conjugate) compared to a nonspecific control antibody (red).

Background References:

- (1) Roux, P.P. and Blenis, J. (2004) *Microbiol Mol Biol Rev* 68, 320–344.
- (2) Baccarini, M. (2005) *FEBS Lett* 579, 3271–3277.
- (3) Meloche, S. and Pouyssegur, J. (2007) *Oncogene* 26, 3227–3239.
- (4) Roberts, P.J. and Der, C.J. (2007) *Oncogene* 26, 3291–3310.
- (5) Rubinfeld, H. and Seger, R. (2005) *Mol Biotechnol* 31, 151–174.
- (6) Murphy, L.O. and Blenis, J. (2006) *Trends Biochem Sci* 31, 268–275.
- (7) Dalby, K.N. et al. (1998) *J Biol Chem* 273, 1496–1505.
- (8) Marais, R. et al. (1993) *Cell* 73, 381–393.
- (9) Kortenjann, M. et al. (1994) *Mol Cell Biol* 14, 4815–4824.
- (10) Owens, D.M. and Keyse, S.M. (2007) *Oncogene* 26, 3203–3213.

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

Storage: Supplied in PBS (pH 7.2), less than 0.1% sodium azide, 2.0 mg/ml BSA. Store at 4°C. *Protect from light. Do not freeze.*

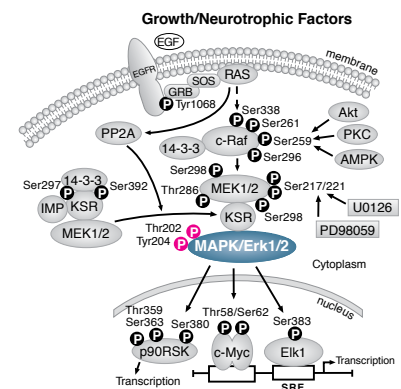
*Species cross-reactivity other than human is determined by Western blot using the unconjugated antibody.

Recommended Antibody Dilutions:

Flow Cytometry 1:50

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.



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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