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## Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb (Alexa Fluor® 647 Conjugate)

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

<b>Applications:</b> FC-FP	<b>Reactivity:</b> H M R Hm Mk Mi Z B Pg	<b>Sensitivity:</b> Endogenous	<b>Source/Isotype:</b> Mouse IgG1	<b>UniProt ID:</b> #P27361, #P28482	<b>Entrez-Gene Id:</b> 5595, 5594
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<b>Product Usage Information</b>	<b>Application</b> Flow Cytometry (Fixed/Permeabilized)	<b>Dilution</b> 1:50
<b>Storage</b>	Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.	
<b>Specificity/Sensitivity</b>	Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb (Alexa Fluor® 647 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.	
<b>Source / Purification</b>	Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues around Thr202/Tyr204 of human p44 MAP kinase. This antibody was conjugated to Alexa Fluor® 647 under optimal conditions with an F/P ratio of 2-6. The Alexa Fluor® 647 dye is maximally excited by red light (e.g. 633 nm He-Ne laser). Antibody conjugates of the Alexa Fluor® 647 dye produce bright far-red-fluorescence emission, with a peak at 665 nm.	
<b>Description</b>	This Cell Signaling Technology antibody is conjugated to Alexa Fluor®647 fluorescent dye and tested in-house for direct flow cytometric analysis of human cells. This antibody is expected to exhibit the same species cross-reactivity as the unconjugated Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (E10) Mouse mAb #9106.	
<b>Background</b>	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.	
<b>Background References</b>	<ol style="list-style-type: none"> <li>Roux, P.P. and Blenis, J. (2004) <i>Microbiol Mol Biol Rev</i> 68, 320-44.</li> <li>Baccarini, M. (2005) <i>FEBS Lett</i> 579, 3271-7.</li> <li>Meloche, S. and Pouyssegur, J. (2007) <i>Oncogene</i> 26, 3227-39.</li> <li>Roberts, P.J. and Der, C.J. (2007) <i>Oncogene</i> 26, 3291-310.</li> <li>Rubinfeld, H. and Seger, R. (2005) <i>Mol Biotechnol</i> 31, 151-74.</li> <li>Murphy, L.O. and Blenis, J. (2006) <i>Trends Biochem Sci</i> 31, 268-75.</li> <li>Dalby, K.N. et al. (1998) <i>J Biol Chem</i> 273, 1496-505.</li> <li>Marais, R. et al. (1993) <i>Cell</i> 73, 381-93.</li> <li>Kortenjann, M. et al. (1994) <i>Mol Cell Biol</i> 14, 4815-24.</li> <li>Owens, D.M. and Keyse, S.M. (2007) <i>Oncogene</i> 26, 3203-13.</li> </ol>	

### Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

### Applications Key

**FC-FP:** Flow Cytometry (Fixed/Permeabilized)

## 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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