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## Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP<sup>®</sup> Rabbit mAb (Alexa Fluor<sup>®</sup> 488 Conjugate)

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

Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
IHC-P	H M R Hm Mk Mi Dm Z B Dg Pg Sc	Endogenous	Rabbit IgG	#P27361, #P28482	5595, 5594

<b>Product Usage Information</b>	<b>Application</b> Immunohistochemistry (Paraffin)	<b>Dilution</b> 1:50 - 1:200
<b>Storage</b>	Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/mL BSA. Store at 4°C. <i>Do not aliquot the antibody. Protect from light. Do not freeze.</i>	
<b>Specificity/Sensitivity</b>	Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP <sup>®</sup> Rabbit mAb (Alexa Fluor <sup>®</sup> 488 Conjugate) 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 Thr202. This antibody does not cross-react with the corresponding phosphorylated residues of either JNK/SAPK or p38 MAP kinases.	
<b>Species predicted to react based on 100% sequence homology</b>	Chicken, <i>C. elegans</i>	
<b>Source / Purification</b>	Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr202/Tyr204 of human p44 MAP kinase.	
<b>Description</b>	This Cell Signaling Technology <sup>®</sup> antibody is conjugated to Alexa Fluor <sup>®</sup> 488 fluorescent dye under optimal conditions. This antibody conjugate is expected to exhibit the same species cross-reactivity as the unconjugated Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP <sup>®</sup> Rabbit mAb #4370.	
<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** IHC-P: Immunohistochemistry (Paraffin)

## Cross-Reactivity Key

**H:** Human **M:** Mouse **R:** Rat **Hm:** Hamster **Mk:** Monkey **Mi:** Mink **Dm:** D. melanogaster **Z:** Zebrafish **B:** Bovine **Dg:** Dog **Pg:** Pig **Sc:** S. cerevisiae

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