

**p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb  
(Alexa Fluor® 647 Conjugate)**

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

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

**Product Usage Information****Application**

Flow Cytometry (Fixed/Permeabilized)

**Dilution**

1:50

**Storage**

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.*

**Specificity/Sensitivity**

p44/42 MAP Kinase (137F5) Rabbit mAb (Alexa Fluor® 647 Conjugate) detects endogenous levels of total p44/42 MAP kinase (Erk1/Erk2) protein. The antibody does not cross-react with JNK/SAPK or p38 MAP kinase.

**Species predicted to react based on 100% sequence homology**

Chicken

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of rat p44 MAP kinase.

**Description**

This Cell Signaling Technology (CST) antibody is conjugated to Alexa Fluor® 647 fluorescent dye and tested in-house for direct flow cytometry in human cells. The antibody is expected to exhibit the same species cross-reactivity as the unconjugated antibody (p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb #4695).

**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**

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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.

**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 **Dm:** D. melanogaster **Z:** Zebrafish **B:** Bovine **Dg:** Dog **Pg:** Pig **Ce:** C. elegans

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