

**p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb**

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, W-S, IP, IHC-P, IF-F, IF-IC, FC-FP	H M R Hm Mk Mi Dm Z B Dg Pg Ce	Endogenous	42, 44	Rabbit IgG	#P27361, #P28482	5595, 5594

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

Western Blotting  
Simple Western™  
Immunoprecipitation  
Immunohistochemistry (Paraffin)  
Immunofluorescence (Frozen)  
Immunofluorescence (Immunocytochemistry)  
Flow Cytometry (Fixed/Permeabilized)

**Dilution**

1:1000  
1:10 - 1:50  
1:50  
1:125 - 1:500  
1:400 - 1:800  
1:400 - 1:1600  
1:200 - 1:800

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #68303.

**Specificity/Sensitivity**

p44/42 MAP Kinase (137F5) Rabbit mAb 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 C-terminus of human p44 MAP kinase.

**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**

1. Roux, P.P. and Blenis, J. (2004) *Microbiol Mol Biol Rev* 68, 320-44.
2. Baccarini, M. (2005) *FEBS Lett* 579, 3271-7.
3. Meloche, S. and Pouyssegur, J. (2007) *Oncogene* 26, 3227-39.
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.
11. Suzuki, M. et al. (2015) *J Immunol* 195, 1273-81.

<b>Species Reactivity</b>	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
<b>Western Blot Buffer</b>	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
<b>Applications Key</b>	<b>W:</b> Western Blotting <b>W-S:</b> Simple Western™ <b>IP:</b> Immunoprecipitation <b>IHC-P:</b> Immunohistochemistry (Paraffin) <b>IF-F:</b> Immunofluorescence (Frozen) <b>IF-IC:</b> Immunofluorescence (Immunocytochemistry) <b>FC-FP:</b> Flow Cytometry (Fixed/Permeabilized)
<b>Cross-Reactivity Key</b>	<b>H:</b> Human <b>M:</b> Mouse <b>R:</b> Rat <b>Hm:</b> Hamster <b>Mk:</b> Monkey <b>Mi:</b> Mink <b>Dm:</b> D. melanogaster <b>Z:</b> Zebrafish <b>B:</b> Bovine <b>Dg:</b> Dog <b>Pg:</b> Pig <b>Ce:</b> C. elegans
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