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Store at -20C
#4696

p44/42 MAPK (Erk1/2) (L34F12) Mouse mAb

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, W-F, IHC-P, IF-IC	H M R Mk Mi Z B Pg	Endogenous	42, 44	Mouse IgG1	#P27361, #P28482	5595, 5594

Product Usage Information

Application

Western Blotting
Fluorescent Western
Immunohistochemistry (Paraffin)
Immunofluorescence (Immunocytochemistry)

Dilution

1:2000
1:2000
1:250 - 1:1000
1:100

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 #78241.

Specificity/Sensitivity

p44/42 MAP Kinase (L34F12) Mouse mAb detects endogenous levels of total p44/42 MAP kinase (Erk1/Erk2) protein. In some systems this antibody may recognize p42/Erk2 more readily than p44/Erk1. The antibody does not cross-react with JNK/SAPK or p38 MAP kinase.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the sequence of p42 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

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- Meloche, S. and Pouyssegur, J. (2007) *Oncogene* 26, 3227-39.
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- Rubinfeld, H. and Seger, R. (2005) *Mol Biotechnol* 31, 151-74.
- Murphy, L.O. and Blenis, J. (2006) *Trends Biochem Sci* 31, 268-75.
- Dalby, K.N. et al. (1998) *J Biol Chem* 273, 1496-505.
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- Kortenjann, M. et al. (1994) *Mol Cell Biol* 14, 4815-24.
- 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).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **W-F:** Fluorescent Western **IHC-P:** Immunohistochemistry (Paraffin) **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey **Mi:** Mink **Z:** Zebrafish **B:** Bovine **Pg:** Pig

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