PhosphoSolutions®
Antibodies that work™

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Anti-Phospho-Thr^{386} MEK 1

Catalog Number: p180-386 **Size:** 100 µl $310.00

Product Description: Affinity purified rabbit polyclonal antibody

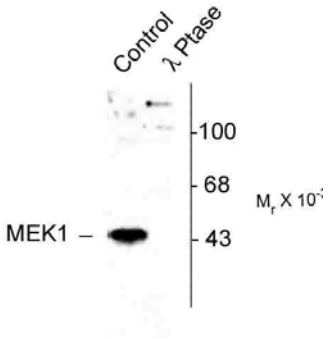
Applications: **WB**: 1:1000

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Thr^{386} of human MEK 1.

Species reactivity: The antibody has been directly tested for reactivity in Western blots with rat tissue. It is anticipated that the antibody will react with bovine, canine, chicken, human, mouse, non-human primates and *Xenopus* based on the fact that these species have 100% homology with the amino acid sequence used as antigen.

Biological Significance: MEK 1 (MAP Kinase Kinase, also known as MKK) is an integral component of the MAP kinase cascade that regulates cell growth and differentiation (Ahn, 1993; Chong et al., 2003). This pathway also plays a key role in synaptic plasticity in the brain (Adams and Sweatt, 2002). Activated MEK 1 acts as a dual specificity kinase phosphorylating both a threonine and a tyrosine residue on MAP kinase (Kyriakis et al., 1991; Seger et al., 1991; Crews et al., 1992). Conversely, there also appears to be a feedback phosphorylation of MEK 1 by MAP kinase. The sites on MEK 1 that are phosphorylated by MAP kinase are Thr^{292} and Thr^{386} (Mansour et al., 1994).

Anti-Phospho Thr^{386} MEK 1



Western blot of human T47D cells showing specific immunolabeling of the ~45k MEK 1 (Control). The phosphospecificity of this labeling is shown in the second lane (lambda phosphatase: λ Ptase) The blot is identical to the control except that it was incubated in λ Ptase (1200 units for 30 min) before being exposed to the MEK 1 Thr^{386} antibody. The immunolabeling of MEK 1 is completely eliminated by λ Ptase.

WB = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation
Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg per ml BSA and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots.
Storage and Stability. For long term storage –20°C is recommended. Stable at –20°C for at least 1 year.
Shipment: Domestic - Blue Ice; International – Blue Ice or Dry Ice.

Purification Method: Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

Antibody Specificity: Specific for the ~45k MEK 1 protein phosphorylated at Thr^{386}. The immunolabeling is completely eliminated by treatment with λ-phosphatase.

Quality Control Tests: Western blots performed on each lot.

References:

Adams JP, Sweatt JD (2002) Molecular psychology: Roles for the ERK MAP kinase cascade in memory. Annu Rev Pharmacol Toxicol 42:135-163.

Ahn NG (1993) The MAP kinase cascade. Discovery of a new signal transduction pathway. Mol Cell Biochem 127-128:201-209.

Chong H, Vikis HG, Guan KL (2003) Mechanisms of regulating the Raf kinase family. Cellular Signalling 15:463-469.

Crews CM, Alessandrini A, Erikson RL (1992) The primary structure of MEK, a protein kinase that phosphorylates the ERK gene product. Science 258:478-480.

Kyriakis JM, Brautigan DL, Ingebritsen TS, Avruch J (1991) pp54 Microtubule-associated protein-2 kinase requires both tyrosine and serine/threonine phosphorylation for activity. J Biol Chem 266:10043-10046.

Mansour SJ, Resing KA, Candi JM, Hermann AS, Gloor JW, Herskind KR, Wartmann M, Davis RJ, Ahn NG (1994) Mitogen-activated protein (MAP) kinase phosphorylation of MAP kinase kinase: Determination of phosphorylation sites by mass spectrometry and site-directed mutagenesis. J Biochem (Tokyo) 116:304-314.

Seger R, Ahn NG, Boulton TG, Yancopoulos GD, Panayotatos N, Radziejewska E, Ericsson L, Bratlien RL, Cobb MH, Krebs EG (1991) Microtubule-associated protein 2 kinases, ERK1 and ERK2, undergo autophosphorylation on both tyrosine and threonine residues: Implications for their mechanism of activation. Proc Natl Acad Sci USA 88:6142-6146.

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