

Phospho-MEK1/2 (Ser217/221) Antibody

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rev. 08/09/17

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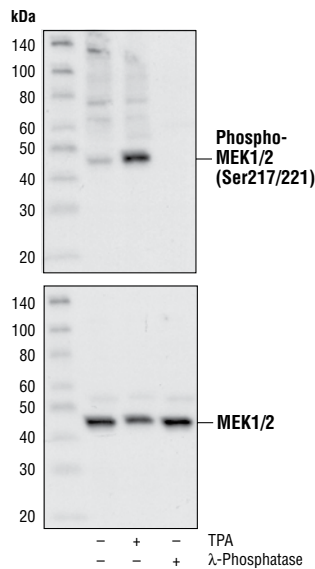
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP Endogenous	H, M, R, Mk, Sc	45 kDa	Rabbit**

Background: MEK1 and MEK2, also called MAPK or Erk kinases, are dual-specificity protein kinases that function in a mitogen activated protein kinase cascade controlling cell growth and differentiation (1-3). Activation of MEK1 and MEK2 occurs through phosphorylation of two serine residues at positions 217 and 221 (in the activation loop of subdomain VIII) by Raf-like molecules. MEK1/2 is activated by a wide variety of growth factors and cytokines and also by membrane depolarization and calcium influx (1-4). Constitutively active forms of MEK1/2 are sufficient for the transformation of NIH/3T3 cells or the differentiation of PC12 cells (4). MEK activates p44 and p42 MAP kinase by phosphorylating both threonine and tyrosine residues at sites located within the activation loop of kinase subdomain VIII.

CST's Phospho- MEK1/2 (Ser217/221) Antibody selectively recognizes active MEK, i.e., only when phosphorylated at Ser217/221, and hence is an excellent marker of MEK1/2 activity.

Specificity/Sensitivity: Phospho-MEK1/2 (Ser217/221) Antibody detects endogenous levels of MEK1/2 only when activated by phosphorylation at Ser217/221. This antibody does not cross-react with related kinases including activated SEK (MKK4), MKK3 or MKK6. It will also react with MEK1/2 singly phosphorylated at Ser217 and singly phosphorylated at Ser221.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phospho-peptide (KLH-coupled) corresponding to residues around Ser217/221 of human MEK1/2. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from untreated, TPA-treated or λ -phosphatase-treated HeLa cells, using Phospho-MEK 1/2 (Ser217/221) Antibody #9121 (upper) or MEK 1/2 Antibody #9122 (lower).

Entrez-Gene ID #5604, 5605
Swiss-Prot Acc. #Q02750, P36507

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

***Species cross-reactivity is determined by Western blot.**
****Anti-rabbit secondary antibodies must be used to detect this antibody**

Recommended Antibody Dilutions:

Western Blotting 1:1000
Immunoprecipitation 1:100

Companion Products:

Phospho-MEK1 (Thr286) Antibody #9127
Phospho-MEK1 (Ser298) Antibody #9128
Phospho-MEK1/2 (Ser221) (166F8) Rabbit mAb #2338
Phospho-p44/42 MAP Kinase (Thr202/Tyr204) Antibody #9101
Phospho-p44/42 MAPK (Thr202/Tyr204) (E10) Mouse mAb #9106
MEK1 Antibody #9124
MEK2 Antibody #9125
MEK1/2 (47E6) Rabbit mAb #9126
MEK1/2 Antibody #9122
MEK1/2 HeLa Control Cell Extracts #9160
Anti-rabbit IgG, HRP-linked Antibody #7074
Prestained Protein Marker, Broad Range (Premixed Format) #7720
Biotinylated Protein Ladder Detection Pack #7727
20X LumiGLO® Reagent and 20X Peroxide #7003

IMPORTANT: For Western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide

Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebra fish B—bovine

Dg—dog Pg—pig Sc—S. cerevisiae All—all species expected Species enclosed in parentheses are predicted to react based on 100% sequence homology.

Selected Application References:

MacNicol, M.C. et al. (2000) Disruption of the 14-3-3 binding site within the B-Raf kinase domain uncouples catalytic activity from PC12 cell differentiation. *J. Biol. Chem.* 275, 3803–3809. Application: W.

Rosenberger, C.M. et al. (2002) Macrophages Inhibit Salmonella Typhimurium Replication through MEK/ERK Kinase and Phagocyte NADPH Oxidase Activities. *The Journal of Biological Chemistry* 277, 18753–18762. Application: W.

Umenishi, F. and Schrier, R.W. (2003) Hypertonicity-induced aquaporin-1 (AQP1) expression is mediated by the activation of MAPK pathways and hypertonicity-responsive element in the AQP1 gene. *J. Biol. Chem.* 278, 15765–15770. Application: W.

Piatelli, M.J. et al. (2004) Phosphatidylinositol 3-kinase-dependent mitogen-activated protein/extracellular signal-regulated kinase kinase 1/2 and NF- κ B signaling pathways are required for B cell antigen receptor-mediated cyclin D2 induction in mature B cells. *J. Immunol.* 172, 2753–2762. Application: W.

Pizon, V. et al. (2000) Rap1A protein interferes with various MAP kinase activating pathways in skeletal myogenic cells. *Oncogene* 19, 6074–6081. Application: W.

Wang, X. et al. (2000) Requirement for ERK Activation in Cisplatin-induced Apoptosis. *J. Biol. Chem.* 275, 39435–39443. Application: W.

Background References:

- (1) Crews, C.M. et al. (1992) *Science* 258, 478–480.
- (2) Alessi, D.R. et al. (1994) *EMBO J.* 13, 1610–1619.
- (3) Rosen, L.B. et al. (1994) *Neuron* 12, 1207–1221.
- (4) Cowley, S. et al. (1994) *Cell* 77, 841–852.