Phospho-MEK1/2 (Ser217/221) Antibody

**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.

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

**Recommended Antibody Dilutions:**
- Western Blotting 1:1000
- Immunoprecipitation 1:100

**Applications**
- Western (W), Immunoprecipitation (IP), Endogenous (H, M, R, Mk, Sc)

**Species Cross-Reactivity**
- Human (H), Mouse (M), Rat (R), Mink (Mk), Scrambler (Sc)

**Molecular Wt.**
- 45 kDa

**Source**
- Rabbit

**Entrez-Gene ID** #5604, 5605

**Swiss-Prot Acc.** #Q02750, P36507

**Recommended 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
- 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
- CIP—Chromatin Immunoprecipitation
- IF—Immunofluorescence
- F—Flow cytometry
- E—ELISA-Peptide

**Species Cross-Reactivity Key:**
- H—human
- M—mouse
- R—rat
- Hm—hamster
- Mk—mink
- Mi—monkey
- 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.


Background References: