

Polyclonal Antibody to MAPKK1 / MAPKK2 pSer218/222 - Purified

Alternate names:	MEK1, MEK2, MKK1, MKK2, PRKMK1, PRKMK2
Catalog No.:	AP03013PU-N
Quantity:	50 µg
Concentration:	1.0 mg/ml
Background:	MEK (MAPKK, kinase of mitogen-activated protein kinase) is the medium one of three components of MAP kinase cascade - an important signaling pathway that regulates cell growth and differentiation. Raf (MAPKKK) activates MEK 1 and 2 via phosphorylation of two serine residues (Ser218 and Ser222). Activated MEK 1/2 then acts as a dual specificity kinase phosphorylating both a threonine and a tyrosine residue on ERK (MAPK, mitogen-activated protein kinase). This phosphorylation of ERK by MEK 1/2 is a critical step in the MAP kinase cascade. Phosphorylated ERK is capable of translocating to the nucleus, where it regulates gene expression by activating transcription factors.
Host:	Rabbit
Immunogen:	Synthetic peptide (coupled with KLH) derived from aminoacid sequence 33-53 of human MAPK Kinase 1. Remarks: The immunogen sequence is highly conserved within species (human, mouse, rat, hamster, bovine etc.).
Format:	State: Liquid purified IgG fraction (> 95% pure by SDS-PAGE). Purification: Immunoaffinity chromatography. Buffer System: PBS containing 15 mM sodium azide as preservative and 0.2% (w/v) high-grade BSA (Protease free) as stabilizer.
Applications:	<u>Western Blotting under reducing and non-reducing conditions:</u> Recommended dilution: 0.5 µg/ml Positive material: RAJI human Burkitt lymphoma cell line Sample preparation: Resuspend approx. 50 mil. cells in 1 ml cold Lysis buffer (1% laurylmaltoside in 20 mM Tris/Cl, 100 mM NaCl pH 8.2, 50 mM NaF including Protease inhibitor Cocktail). Incubate 60 min on ice. Centrifuge to remove cell debris. Mix lysate with non-reducing/reducing Laemmli SDS-PAGE sample buffer. Boil for 5 min. Reducing conditions are recommended. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
Specificity:	The polyclonal antibody reacts with MEK 1/2. MEK 1 and MEK 2 are integral components of the MAP kinase cascade, an important pathway for cell growth and differentiation. Species: Human. Other species not tested.

Storage: Store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer. Avoid repeated freezing and thawing.
Shelf life: one year from despatch

General Readings:

1. Chang F, Steelman LS, Lee JT, Shelton JG, Navolanic PM, Blalock WL, et al. Signal transduction mediated by the Ras/Raf/MEK/ERK pathway from cytokine receptors to transcription factors: potential targeting for therapeutic intervention. *Leukemia*. 2003 Jul;17(7):1263-93. PubMed PMID: 12835716.
2. Park JI, Strock CJ, Ball DW, Nelkin BD. The Ras/Raf/MEK/extracellular signal-regulated kinase pathway induces autocrine-paracrine growth inhibition via the leukemia inhibitory factor/JAK/STAT pathway. *Mol Cell Biol*. 2003 Jan;23(2):543-54. PubMed PMID: 12509453.
3. Sundaram MV: RTK/Ras/MAPK signaling. *WormBook*. 2006 Feb 11;:1-19.
4. McCubrey JA, Steelman LS, Chappell WH, Abrams SL, Wong EW, Chang F, et al. Roles of the Raf/MEK/ERK pathway in cell growth, malignant transformation and drug resistance. *Biochim Biophys Acta*. 2007 Aug;1773(8):1263-84. Epub 2006 Oct 7. PubMed PMID: 17126425.
5. Scholl FA, Dumesic PA, Barragan DI, Harada K, Bissonauth V, Charron J, et al. Mek1/2 MAPK kinases are essential for Mammalian development, homeostasis, and Raf-induced hyperplasia. *Dev Cell*. 2007 Apr;12(4):615-29. PubMed PMID: 17419998.
6. Park ER, Eblen ST, Catling AD. MEK1 activation by PAK: a novel mechanism. *Cell Signal*. 2007 Jul;19(7):1488-96. Epub 2007 Jan 24. PubMed PMID: 17314031.

Pictures: **Figure 1.** Western Blotting analysis (reducing conditions) of human MEK1/2 in whole cell lysate of RAJI human Burkitt lymphoma cell line using polyclonal anti-MEK1/2 antibody.

