Revision 1

Phospho-MEK1 (Thr286) Antibody

#9127 Store at -20C

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC, FC-FP	H R Mk	Endogenous	45	Rabbit	#Q02750	5604

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (Immunocytochemistry)	1:100
Flow Cytometry (Fixed/Permeabilized)	1:50

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.

Specificity/Sensitivity

Phospho-MEK1 (Thr286) Antibody detects endogenous levels of MEK1 phosphorylated at threonine 286. This antibody does not cross-react with phosphorylated MEK2.

Species predicted to react based on 100% sequence homology

Mouse

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr286 of human MEK1. Antibodies are purified by protein A and peptide affinity chromatography.

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, located 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 PC-12 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. MEK1 is phosphorylated at Ser298 by PAK1, which facilitates signal transduction from Raf to MEK1 and Erk2 (5-7). MEK1 is also phosphorylated by cdk5 at Thr286 in mitotic cells, causing negative feedback of the p44/42 MAP kinase pathway (8).

Background References

1. Crews, C.M. et al. (1992) *Science* 258, 478-480.
2. Alessi, D.R. et al. (1994) *EMBO J.* 13, 1610-19.
3. Rosen, L.B. et al. (1994) *Neuron* 12, 1207-21.
4. Cowley, S. et al. (1994) *Cell* 77, 841-52.
5. Xu, B. et al. (1999) *J. Biol. Chem.* 274, 34029-34035.
6. Coles, L.C. and Shaw, P.E. (2002) *Oncogene* 21, 2236-2244.
7. Eblen, S. T. et al. (2002) *Mol. Cell. Biol.* 22, 6023-6033.
8. Sharma, P. et al. (2002) *J. Biol. Chem.* 277, 528-534.

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human **R:** Rat **Mk:** Monkey

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