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MAP2K1 Antibody (T291)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7960e

Product Information

Application	IHC-P, WB, E
Primary Accession	Q02750
Other Accession	Q01986, P29678, P31938, Q63980
Reactivity	Human
Predicted	Hamster, Mouse, Rabbit, Rat, Bovine, Canine, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	43439
Antigen Region	270-299

Additional Information

Gene ID	5604
Other Names	Dual specificity mitogen-activated protein kinase kinase 1, MAP kinase kinase 1, MAPKK 1, MKK1, ERK activator kinase 1, MAPK/ERK kinase 1, MEK 1, MAP2K1, MEK1, PRKMK1
Target/Specificity	This MAP2K1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 270-299 amino acids from human MAP2K1.
Dilution	IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MAP2K1 Antibody (T291) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MAP2K1 (HGNC:6840)
Synonyms	MEK1, PRKMK1

Function	Dual specificity protein kinase which acts as an essential component of the MAP kinase signal transduction pathway. Binding of extracellular ligands such as growth factors, cytokines and hormones to their cell-surface receptors activates RAS and this initiates RAF1 activation. RAF1 then further activates the dual-specificity protein kinases MAP2K1/MEK1 and MAP2K2/MEK2. Both MAP2K1/MEK1 and MAP2K2/MEK2 function specifically in the MAPK/ERK cascade, and catalyze the concomitant phosphorylation of a threonine and a tyrosine residue in a Thr-Glu-Tyr sequence located in the extracellular signal-regulated kinases MAPK3/ERK1 and MAPK1/ERK2, leading to their activation and further transduction of the signal within the MAPK/ERK cascade. Activates BRAF in a KSR1 or KSR2-dependent manner; by binding to KSR1 or KSR2 releases the inhibitory intramolecular interaction between KSR1 or KSR2 protein kinase and N-terminal domains which promotes KSR1 or KSR2-BRAF dimerization and BRAF activation (PubMed:29433126). Depending on the cellular context, this pathway mediates diverse biological functions such as cell growth, adhesion, survival and differentiation, predominantly through the regulation of transcription, metabolism and cytoskeletal rearrangements. One target of the MAPK/ERK cascade is peroxisome proliferator-activated receptor gamma (PPARG), a nuclear receptor that promotes differentiation and apoptosis. MAP2K1/MEK1 has been shown to export PPARG from the nucleus. The MAPK/ERK cascade is also involved in the regulation of endosomal dynamics, including lysosome processing and endosome cycling through the perinuclear recycling compartment (PNRC), as well as in the fragmentation of the Golgi apparatus during mitosis.
Cellular Location	Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, microtubule organizing center, spindle pole body. Cytoplasm. Nucleus Membrane; Peripheral membrane protein. Note=Localizes at centrosomes during prometaphase, midzone during anaphase and midbody during telophase/cytokinesis (PubMed:14737111). Membrane localization is probably regulated by its interaction with KSR1 (PubMed:10409742)
Tissue Location	Widely expressed, with extremely low levels in brain.

Background

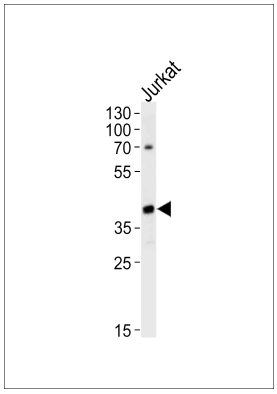
MAP2K1 is a member of the dual specificity protein kinase family, which acts as a mitogen-activated protein (MAP) kinase kinase. MAP kinases, also known as extracellular signal-regulated kinases (ERKs), act as an integration point for multiple biochemical signals. This protein kinase lies upstream of MAP kinases and stimulates the enzymatic activity of MAP kinases upon wide variety of extra- and intracellular signals. As an essential component of MAP kinase signal transduction pathway, this kinase is involved in many cellular processes such as proliferation, differentiation, transcription regulation and development.

References

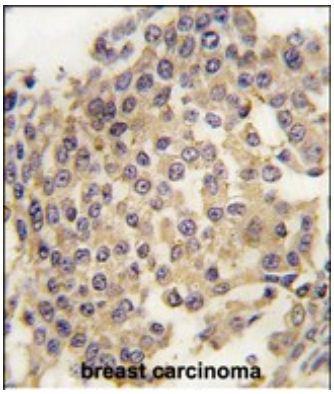
Zheng, B., et al., Blood 102(3):1019-1027 (2003).
Li, S.P., et al., Cancer Res. 63(13):3473-3477 (2003).
Zhu, X., et al., J. Neurochem. 86(1):136-142 (2003).
Fringer, J., et al., J. Biol. Chem. 278(23):20612-20617 (2003).
Witowsky, J.A., et al., J. Biol. Chem. 278(3):1403-1406 (2003).

Images

MAP2K1 Antibody (pT291) (Cat. #AP7960e) western blot analysis in Jurkat cell line lysates (35ug/lane).This



demonstrates the MAP2K1 antibody detected the MAP2K1 protein (arrow).



Formalin-fixed and paraffin-embedded human breast carcinoma tissue reacted with MAP2K1 Antibody (T291) (Cat.#AP7960e), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.