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Anti-MKK4 (Phospho-S257) Antibody

Catalog # AP61081

Product Information

Application	WB, IHC, IF/IC
Primary Accession	P45985
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	44288

Additional Information

Gene ID	6416
Other Names	JNKK1; MEK4; MKK4; PRKMK4; SEK1; SERK1; SKK1; Dual specificity mitogen-activated protein kinase kinase 4; MAP kinase kinase 4; MAPKK 4; JNK-activating kinase 1; MAPK/ERK kinase 4; MEK 4; SAPK/ERK kinase 1; SEK1; Stress-activated protein kinase kinase 1; SAPK kinase 1; SAPKK-1; SAPKK1; c-Jun N-terminal kinase kinase 1; JNKK
Target/Specificity	KLH-conjugated synthetic phosphopeptide corresponding to residues surrounding S257 of human MKK4 protein. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000), IHC (1/50 - 1/100) IHC~~WB (1/500 - 1/1000), IHC (1/50 - 1/100) IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

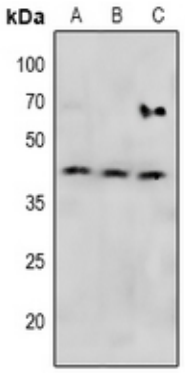
Name	MAP2K4
Synonyms	JNKK1, MEK4, MKK4, PRKMK4, SEK1, SERK1,
Function	Dual specificity protein kinase which acts as an essential component of the MAP kinase signal transduction pathway. Essential component of the stress-activated protein kinase/c-Jun N-terminal kinase (SAP/JNK) signaling pathway. With MAP2K7/MKK7, is the one of the only known kinase to directly activate the stress-activated protein kinase/c-Jun N-terminal kinases MAPK8/JNK1, MAPK9/JNK2 and MAPK10/JNK3. MAP2K4/MKK4 and MAP2K7/MKK7 both activate the JNKs by phosphorylation, but they differ in their preference for the phosphorylation site in the Thr-Pro-Tyr motif. MAP2K4 shows preference for phosphorylation of the Tyr residue and

MAP2K7/MKK7 for the Thr residue. The phosphorylation of the Thr residue by MAP2K7/MKK7 seems to be the prerequisite for JNK activation at least in response to pro-inflammatory cytokines, while other stimuli activate both MAP2K4/MKK4 and MAP2K7/MKK7 which synergistically phosphorylate JNKs. MAP2K4 is required for maintaining peripheral lymphoid homeostasis. The MKK/JNK signaling pathway is also involved in mitochondrial death signaling pathway, including the release cytochrome c, leading to apoptosis. Whereas MAP2K7/MKK7 exclusively activates JNKs, MAP2K4/MKK4 additionally activates the p38 MAPKs MAPK11, MAPK12, MAPK13 and MAPK14.

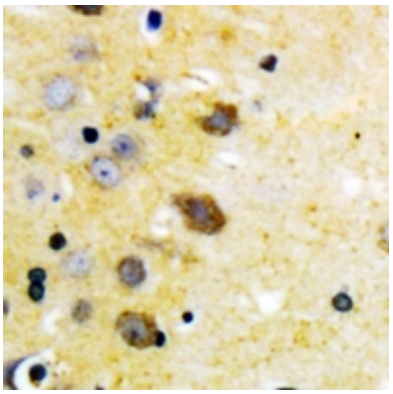
Cellular Location Cytoplasm. Nucleus.

Tissue Location Abundant expression is seen in the skeletal muscle. It is also widely expressed in other tissues

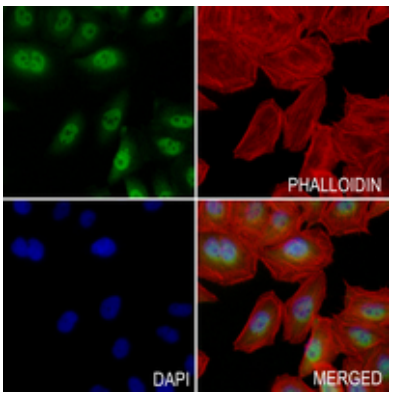
Images



Western blot analysis of MKK4 (Phospho-S257) expression in K562 (A), Hela (B), MCF7 (C) whole cell lysates. (Predicted band size: 44 kD; Observed band size: 44 kD)

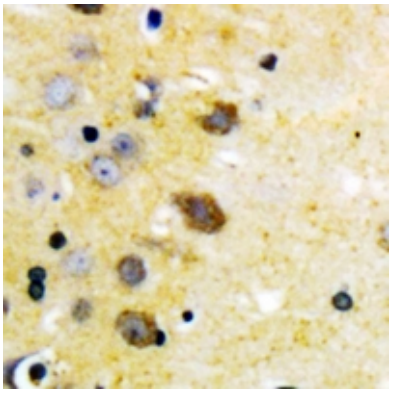


Immunohistochemical analysis of MKK4 (Phospho-S257) staining in human brain formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of MKK4 (Phospho-S257) staining in MCF7 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

Immunohistochemical analysis of MKK4 (pS257) staining in human brain formalin fixed paraffin embedded tissue



section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

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