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MAP2K7 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1641a

Product Information

Application	WB, IHC, FC, ICC, E
Primary Accession	O14733
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	4E5
Isotype	IgG1
Calculated MW	47485
Description	The protein encoded by this gene is a dual specificity protein kinase that belongs to the MAP kinase kinase family. This kinase specifically activates MAPK8/JNK1 and MAPK9/JNK2, and this kinase itself is phosphorylated and activated by MAP kinase kinase kinases including MAP3K1/MEKK1, MAP3K2/MEKK2,MAP3K3/MEKK5, and MAP4K2/GCK. This kinase is involved in the signal transduction mediating the cell responses to proinflammatory cytokines, and environmental stresses. Multiple alternatively spliced transcript variants encoding distinct isoforms have been found, but only one transcript variant has been supported and defined.
Immunogen	Purified recombinant fragment of human MAP2K7 expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	5609
Other Names	Dual specificity mitogen-activated protein kinase kinase 7, MAP kinase kinase 7, MAPKK 7, 2.7.12.2, JNK-activating kinase 2, MAPK/ERK kinase 7, MEK 7, Stress-activated protein kinase kinase 4, SAPK kinase 4, SAPKK-4, SAPKK4, c-Jun N-terminal kinase kinase 2, JNK kinase 2, JNKK 2, MAP2K7, JNKK2, MEK7, MKK7, PRKMK7, SKK4
Dilution	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 FC~~1/200 - 1/400 ICC~~N/A E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MAP2K7 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MAP2K7
Synonyms	JNKK2, MEK7, MKK7, PRKMK7, SKK4
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 MAP2K4/MKK4, 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/MKK4 shows preference for phosphorylation of the Tyr residue and MAP2K7/MKK7 for the Thr residue. The monophosphorylation of JNKs on the Thr residue is sufficient to increase JNK activity indicating that MAP2K7/MKK7 is important to trigger JNK activity, while the additional phosphorylation of the Tyr residue by MAP2K4/MKK4 ensures optimal JNK activation. Has a specific role in JNK signal transduction pathway activated by pro-inflammatory cytokines. The MKK/JNK signaling pathway is also involved in mitochondrial death signaling pathway, including the release cytochrome c, leading to apoptosis. Part of a non-canonical MAPK signaling pathway, composed of the upstream MAP3K12 kinase and downstream MAP kinases MAPK1/ERK2 and MAPK3/ERK1, that enhances the AP-1-mediated transcription of APP in response to APOE (PubMed:28111074).
Cellular Location	Nucleus. Cytoplasm.
Tissue Location	Ubiquitous; with highest level of expression in skeletal muscle. Isoform 3 is found at low levels in placenta, fetal liver, and skeletal muscle.

References

1. Biochem J. 2010 Mar 29;427(2):237-45. 2. J Immunol. 2008 Sep 1;181(5):3252-8.

Images

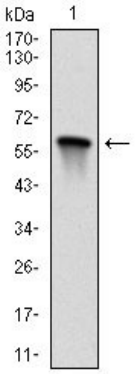
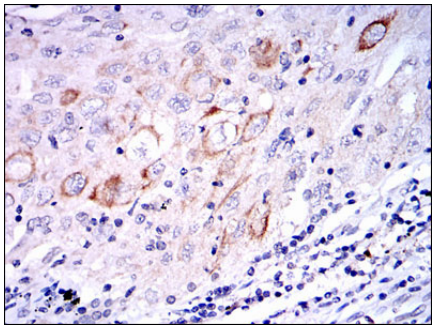


Figure 1: Western blot analysis using MAP2K7 mAb against human MAP2K7 (AA: 7-178) recombinant protein. (Expected MW is 45.1 kDa)

Figure 2: Immunohistochemical analysis of paraffin-embedded lung cancer tissues using MAP2K7 mouse mAb with DAB staining.



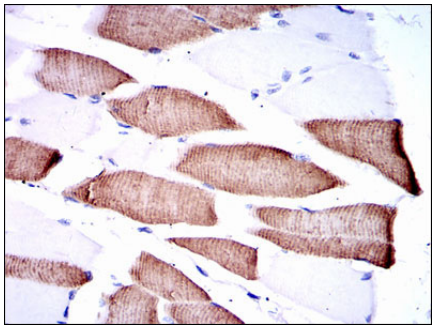


Figure 3: Immunohistochemical analysis of paraffin-embedded muscle tissues using MAP2K7 mouse mAb with DAB staining.

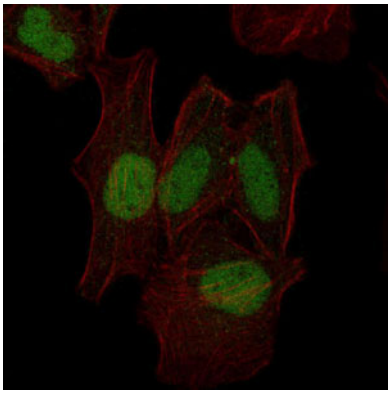


Figure 4: Immunofluorescence analysis of Hela cells using MAP2K7 mouse mAb (green). Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.

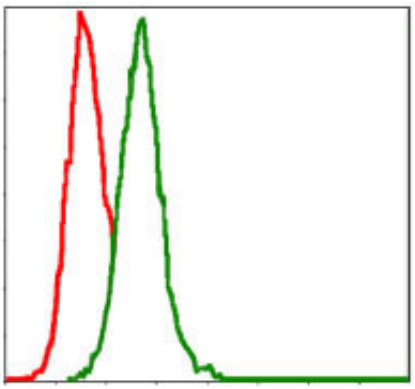


Figure 5: Flow cytometric analysis of Hela cells using MAP2K7 mouse mAb (green) and negative control (red).