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MAP2K4 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1077a

Product Information

Application	IHC, E
Primary Accession	P45985
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	2D10D8; 4G11B2; 2D10C4; 2D10C3
Isotype	Ig M
Calculated MW	44288
Description	MAP2K4(mitogen-activated protein kinase kinase 4), which is located on chromosome 17p11.2, with 399-amino acid protein (about 45 kDa), belongs to the family of protein kinases located upstream of the MAP kinases and responsible for their activation has been identified. MEK-4 (also called MEK4/MKK4) activates both p38 and JNK MAP kinases.MKK4 is a central mediator in the stress activated protein kinase signaling pathway that responds to a number of cellular and environmental stressors. By phosphorylating MAP kinases such as JNK,MKK4 can ultimately transmit stress signals to nuclear transcription factors that mediate various processes including proliferation, apoptosis, and differentiation. Its distinct biological functions have been identified for MKK4 including a role in development, hepatogenesis, and metastasis suppression.
Immunogen	Purified recombinant fragment of MAP2K4 expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	6416
Other Names	Dual specificity mitogen-activated protein kinase kinase 4, MAP kinase kinase 4, MAPKK 4, 2.7.12.2, 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, MAP2K4, JNKK1, MEK4, MKK4, PRKMK4, SEK1, SERK1, SKK1
Dilution	IHC~~1/200 - 1/1000 E~~N/A
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	MAP2K4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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

References

1. Crews, C.M, et al. 1992. Science. 258: 478-480. 2. Cuenda A. 2000. Int. J. Biochem. Cell Biol, 32: 581-587. 3. Kim H. L, Vander Griend D. J, Yang X, et al. 2001.Cancer Res. 61: 2833-2837.

Images

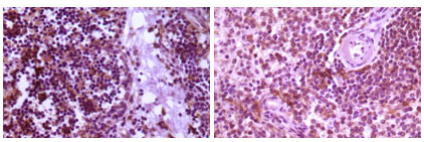

Figure 1: Immunohistochemical analysis of paraffin-embedded human thymoma tissue (left) and spleen tissue (right), showing cytoplasmic localization using MAP2K4 mouse mAb with DAB staining.

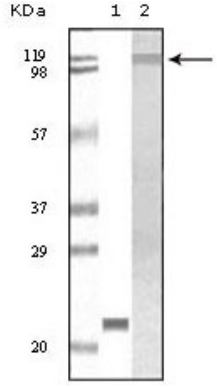

Figure 1: Western blot analysis using TYK2 mouse mAb against truncated TYK2 recombinant protein (1) and Jurkat cell lysate(2).

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