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MAPK3 Antibody

Mouse Monoclonal Antibody (Mab)
Catalog # AM1943b

Product Information

Application	WB, E
Primary Accession	P27361
Other Accession	NP_001035145.1
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Rabbit, Chicken
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1,k
Clone Names	327CT18.1.2
Calculated MW	43136

Additional Information

Gene ID	5595
Other Names	Mitogen-activated protein kinase 3, MAP kinase 3, MAPK 3, ERT2, Extracellular signal-regulated kinase 1, ERK-1, Insulin-stimulated MAP2 kinase, MAP kinase isoform p44, p44-MAPK, Microtubule-associated protein 2 kinase, p44-ERK1, MAPK3, ERK1, PRKM3
Target/Specificity	This MAPK3 monoclonal antibody is generated from mouse immunized with MAPK3 recombinant protein.
Dilution	WB~~1:120~1000 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
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	MAPK3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MAPK3
Synonyms	ERK1, PRKM3

Function	Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway (PubMed:34497368). MAPK1/ERK2 and MAPK3/ERK1 are the 2 MAPKs which play an important role in the MAPK/ERK cascade. They participate also in a signaling cascade initiated by activated KIT and KITLG/SCF. Depending on the cellular context, the MAPK/ERK cascade mediates diverse biological functions such as cell growth, adhesion, survival and differentiation through the regulation of transcription, translation, cytoskeletal rearrangements. The MAPK/ERK cascade also plays a role in initiation and regulation of meiosis, mitosis, and postmitotic functions in differentiated cells by phosphorylating a number of transcription factors. About 160 substrates have already been discovered for ERKs. Many of these substrates are localized in the nucleus, and seem to participate in the regulation of transcription upon stimulation. However, other substrates are found in the cytosol as well as in other cellular organelles, and those are responsible for processes such as translation, mitosis and apoptosis. Moreover, the MAPK/ERK cascade is also involved in the regulation of the 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. The substrates include transcription factors (such as ATF2, BCL6, ELK1, ERF, FOS, HSF4 or SPZ1), cytoskeletal elements (such as CANX, CTTN, GJA1, MAP2, MAPT, PXN, SORBS3 or STMN1), regulators of apoptosis (such as BAD, BTG2, CASP9, DAPK1, IER3, MCL1 or PPARG), regulators of translation (such as EIF4EBP1) and a variety of other signaling-related molecules (like ARHGEF2, DEPTOR, FRS2 or GRB10) (PubMed:35216969). Protein kinases (such as RAF1, RPS6KA1/RSK1, RPS6KA3/RSK2, RPS6KA2/RSK3, RPS6KA6/RSK4, SYK, MKNK1/MNK1, MKNK2/MNK2, RPS6KA5/MSK1, RPS6KA4/MSK2, MAPKAPK3 or MAPKAPK5) and phosphatases (such as DUSP1, DUSP4, DUSP6 or DUSP16) are other substrates which enable the propagation the MAPK/ERK signal to additional cytosolic and nuclear targets, thereby extending the specificity of the cascade. Phosphorylates GJA1 at 'Ser-279' and 'Ser-282' resulting in an increase in GJA1 ubiquitination and ultimately lysosomal degradation (By similarity).
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:P21708}. Nucleus. Membrane, caveola {ECO:0000250|UniProtKB:P21708}. Cell junction, focal adhesion {ECO:0000250|UniProtKB:Q63844} Note=Autophosphorylation at Thr-207 promotes nuclear localization (PubMed:19060905). PEA15-binding redirects the biological outcome of MAPK3 kinase-signaling by sequestering MAPK3 into the cytoplasm (By similarity). {ECO:0000250|UniProtKB:Q63844, ECO:0000269|PubMed:19060905}

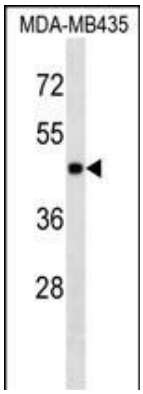
Background

The protein encoded by this gene is a member of the MAP kinase family. MAP kinases, also known as extracellular signal-regulated kinases (ERKs), act in a signaling cascade that regulates various cellular processes such as proliferation, differentiation, and cell cycle progression in response to a variety of extracellular signals. This kinase is activated by upstream kinases, resulting in its translocation to the nucleus where it phosphorylates nuclear targets. Alternatively spliced transcript variants encoding different protein isoforms have been described.

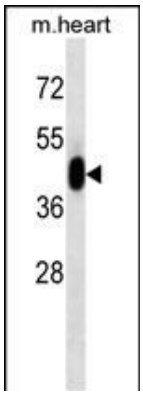
References

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Arana-Argaez, V.E., et al. J. Biol. Chem. 285(43):32824-32833(2010)
Collier, M.E., et al. Arterioscler. Thromb. Vasc. Biol. 30(9):1810-1817(2010)
Lujan, B., et al. Br. J. Cancer 103(4):510-516(2010)
Meng, S., et al. J Mol Cell Biol 2(4):223-230(2010)

Images



MAPK3 Antibody (Cat. #AM1943b) western blot analysis in MDA-MB435 cell line lysates (35µg/lane).This demonstrates the MAPK3 antibody detected the MAPK3 protein (arrow).



MAPK3 Antibody (Cat. #AM1943b) western blot analysis in mouse heart tissue lysates (35µg/lane).This demonstrates the MAPK3 antibody detected the MAPK3 protein (arrow).

Citations

- Proteomic analysis of the effect of extracellular calcium ions on human mesenchymal stem cells: implications for bone tissue engineering.

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