10320 Camino Santa Fe, Suite G
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MAPK3 Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1611a

Specification

MAPK3 Antibody - Product Information

Application	**E, WB, IHC, IF, FC**
Primary Accession	P27361
Reactivity	**Human, Mouse, Rat, Monkey**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**IgG1**
Calculated MW	**44kDa KDa**

Description
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.

Immunogen
Purified recombinant fragment of human MAPK3 expressed in E. Coli.

Formulation
Ascitic fluid containing 0.03% sodium azide.

MAPK3 Antibody - Additional Information

Gene ID 5595

Other Names
Mitogen-activated protein kinase 3, MAP kinase 3, MAPK 3, 2.7.11.24, 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

Dilution
E~~1/10000
WB~~1/500 - 1/2000
IHC~~1/200 - 1/1000
IF~~1/200 - 1/1000
FC~~1/200 - 1/400

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
MAPK3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

MAPK3 Antibody - 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.

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}

MAPK3 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety

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- Cell Culture

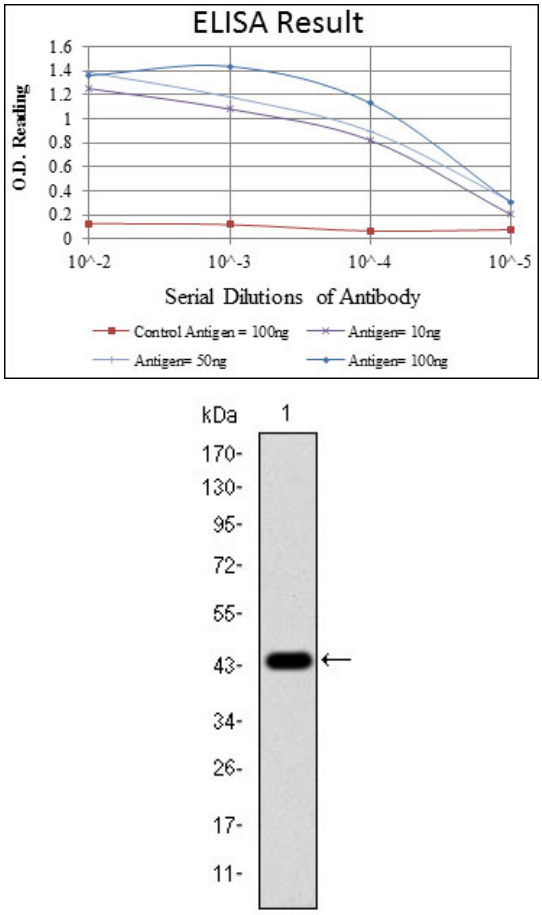

Figure 1: Western blot analysis using MAPK3 mAb against human MAPK3 (AA: 9-143) recombinant protein. (Expected MW is 40.8 kDa)

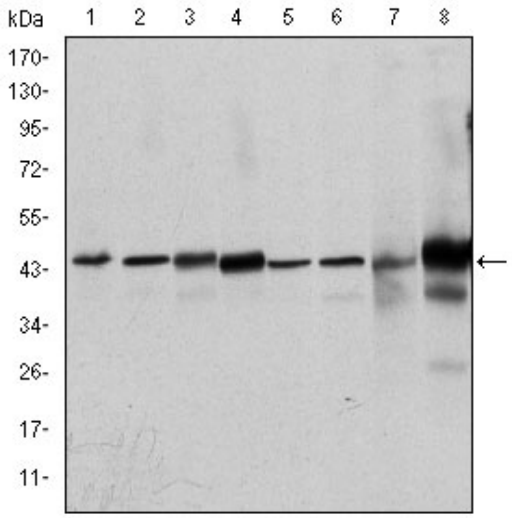

Figure 2: Western blot analysis using MAPK3 mouse mAb against Hela (1), Jurkat (2), RAW264.7 (3), HEK293 (4), K562 (5), NIH/3T3 (6), Cos7 (7) and PC-12 (8) cell lysate.

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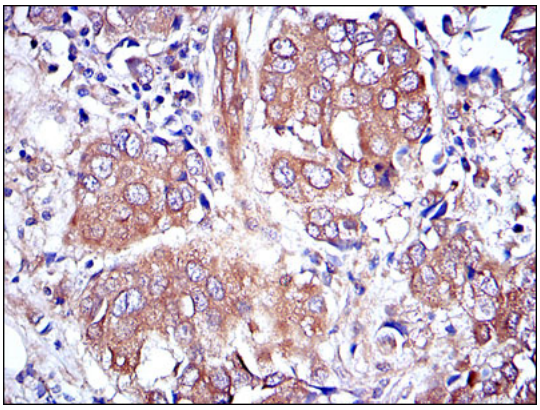

Figure 3: Immunohistochemical analysis of paraffin-embedded breast cancer tissues using MAPK3 mouse mAb with DAB staining.

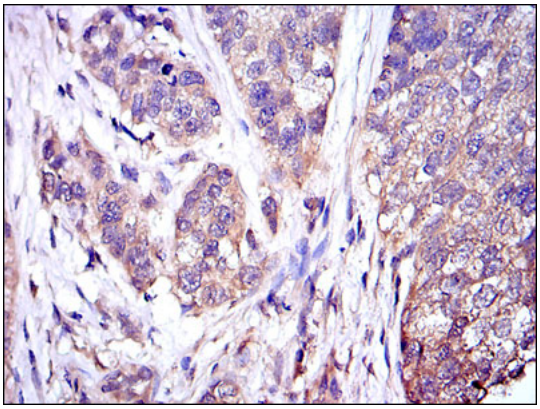

Figure 4: Immunohistochemical analysis of paraffin-embedded bladder cancer tissues using MAPK3 mouse mAb with DAB staining.

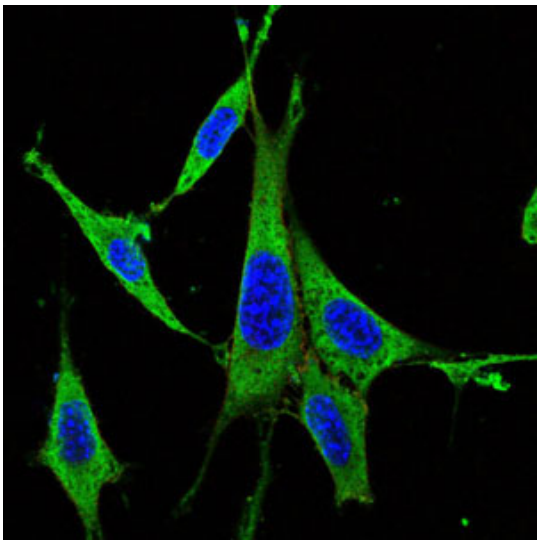

Figure 5: Immunofluorescence analysis of NIH/3T3 cells using MAPK3 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.

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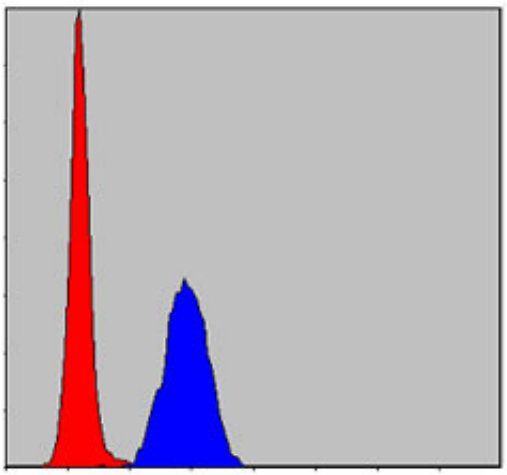

Figure 6: Flow cytometric analysis of Hela cells using MAPK3 mouse mAb (blue) and negative control (red).

MAPK3 Antibody - References

1. Mol Cell. 2009 Nov 13;36(3):477-86. 2. PLoS One. 2009 Oct 22;4(10):e7541.