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KD-Validated Anti-Mitogen-Activated Protein Kinase 1 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1792

Specification

KD-Validated Anti-Mitogen-Activated Protein Kinase 1 Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	P28482
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 41 kDa, observed, 41 kDa KDa**
Gene Name	**MAPK1**
Aliases	**MAPK1; Mitogen-Activated Protein Kinase 1; ERK2; Extracellular Signal Regulated Kinase 2; P41mapk; MAPK; PRKM1; PRKM2; ERK; Mitogen-Activated Protein Kinase 2; MAP Kinase 1; MAP Kinase 2; EC 2.7.11.24; P42-MAPK; MAPK 2; ERK-2; ERT1; Protein Tyrosine Kinase ERK2; MAP Kinase Isoform P42; EC 2.7.11; P42MAPK; MAPK 1; NS13; P38; P40; P41**
Immunogen	**A synthesized peptide derived from human ERK2**

KD-Validated Anti-Mitogen-Activated Protein Kinase 1 Rabbit Monoclonal Antibody - Additional Information

Gene ID	**5594**

Other Names
Mitogen-activated protein kinase 1, MAP kinase 1, MAPK 1, 2.7.11.24, ERT1, Extracellular signal-regulated kinase 2, ERK-2, MAP kinase isoform p42, p42-MAPK, Mitogen-activated protein kinase 2, MAP kinase 2, MAPK 2, MAPK1 (HGNC:6871), ERK2, PRKM1, PRKM2

KD-Validated Anti-Mitogen-Activated Protein Kinase 1 Rabbit Monoclonal Antibody - Protein Information

Name MAPK1 (HGNC:6871)

Synonyms ERK2, PRKM1, PRKM2

Function
Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. 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 FXR1) and a variety of other signaling-related molecules (like ARHGEF2, DCC, FRS2 or GRB10). 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. Mediates phosphorylation of TPR in response to EGF stimulation. May play a role in the spindle assembly checkpoint. Phosphorylates PML and promotes its interaction with PIN1, leading to PML degradation. Phosphorylates CDK2AP2 (By similarity). Phosphorylates phosphoglycerate kinase PGK1 under hypoxic conditions to promote its targeting to the mitochondrion and suppress the formation of acetyl-coenzyme A from pyruvate (PubMed:26942675).

Cellular Location

Cytoplasm, cytoskeleton, spindle. Nucleus. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm. Membrane, caveola {ECO:0000250|UniProtKB:P63086}. Cell junction, focal adhesion {ECO:0000250|UniProtKB:P63085}. Note=Associated with the spindle during prometaphase and metaphase (By similarity). PEA15-binding and phosphorylated DAPK1 promote its cytoplasmic retention. Phosphorylation at Ser- 246 and Ser-248 as well as autophosphorylation at Thr-190 promote nuclear localization.

KD-Validated Anti-Mitogen-Activated Protein Kinase 1 Rabbit Monoclonal 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
- Cell Culture

KD-Validated Anti-Mitogen-Activated Protein Kinase 1 Rabbit Monoclonal Antibody - Images

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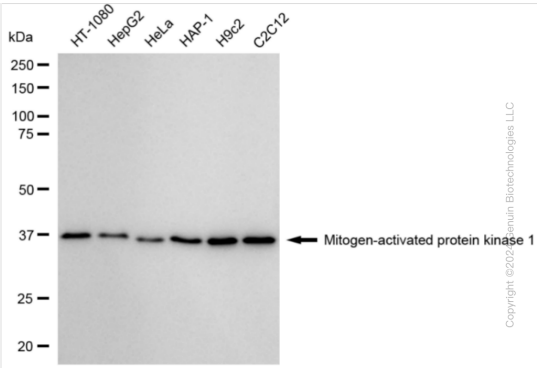
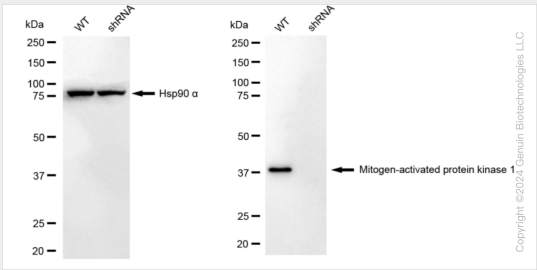
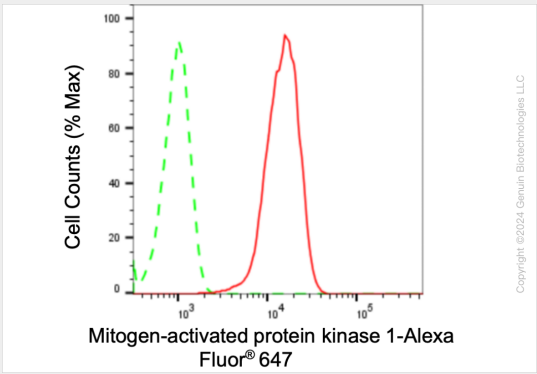


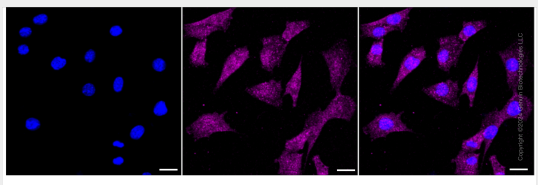
Western blotting analysis using anti-Mitogen-activated protein kinase 1 antibody (Cat#AGI1792). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-Mitogen-activated protein kinase 1 antibody (Cat#AGI1792, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-mitogen-activated protein kinase 1 antibody (Cat#AGI1792). Mitogen-activated protein kinase 1 expression in wild-type (WT) and mitogen-activated protein kinase 1 (MAPK1) shRNA knockdown (KD) HeLa cells with 20 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-mitogen-activated protein kinase 1 antibody (Cat#AGI1792, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of BCL10 expression in HepG2 cells using anti-BCL10 antibody (Cat#62869, 1:2,000). Green, isotype control; red,BCL10.



Immunocytochemical staining of C2C12 cells with anti-Mitogen-activated protein kinase 1 antibody (Cat#AGI1792, 1:1,000). Nuclei were stained blue with DAPI; Mitogen-activated protein kinase 1 was stained magenta with Alexa Fluor® 647. Images were taken using leica stellaris 5.

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Protein abundance based on laser intensity and smart gain: Medium. Scale bar: 20 µm.