

Mouse p44/42 MAPK (Erk1/2) Monoclonal Antibody | anti-MAPK3 antibody

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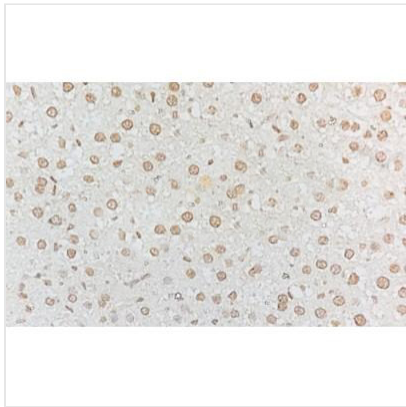
CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA328875	Mouse	Human, Mouse, Rat	ELISA, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

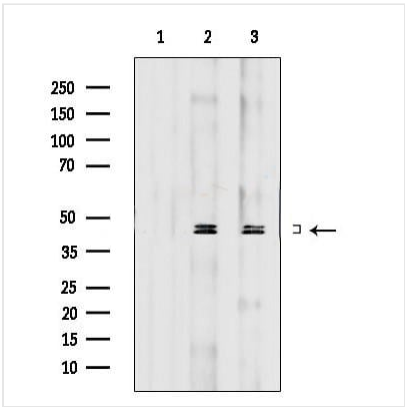
p44/42 MAPK (Erk1/2); Monoclonal Antibody; p44/42 MAPK (Erk1/2) Mouse monoclonal Antibody; ERK 1; ERK; ERK-1; ERK1; ERT 2; ERT2; Extracellular Signal Regulated Kinase 1; Extracellular signal related kinase 1; Extracellular signal-regulated kinase 1; HGNC6877; HS44KDAP; HUMKER1A; Insulin Stimulated MAP2 Kinase; Insulin-stimulated MAP2 kinase; MAP kinase 1; MAP kinase 3; MAP Kinase; MAP kinase isoform p44; MAPK 1; MAPK 3; MAPK; MAPK1; Mapk3; MGC20180; Microtubule Associated Protein 2 Kinase; Microtubule-associated protein 2 kinase; Mitogen Activated Protein Kinase 3; Mitogen-activated protein kinase 1; Mitogen-activated protein kinase 3; MK03_HUMAN; OTTHUMP00000174538; OTTHUMP00000174541; p44 ERK1; p44 MAPK; p44-ERK1; p44-MAPK; P44ERK1; P44MAPK; PRKM 3; PRKM3; Protein Kinase Mitogen Activated 3; ERK 2; ERK-2; ERT1; Extracellular Signal Regulated Kinase 2; Extracellular signal-regulated kinase 2; MAP kinase 2; MAP kinase isoform p42; MAPK 2; Mapk1; MAPK2; Mitogen-activated protein kinase 2; MK01_HUMAN; P38; P40; P41; p42-MAPK; P42MAPK; PRKM1; PRKM2; protein kinase; mitogen-activated; 1; 2; protein tyrosine kinase ERK2; anti-MAPK3 antibody

PRODUCT SPECIFICATIONS

Host	Mouse
Reactivity	Human, Mouse, Rat
Clonality	Monoclonal
Isotype	IgG1
Specificity	p44/42 MAPK (Erk1/2) antibody detects endogenous levels of total p44/42 MAPK (Erk1/2).
Purity/Purification	Affinity-chromatography
Form/Format	Liquid. Mouse IgG1 in phosphate buffered saline (without Mg ²⁺ and Ca ²⁺), pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol
Concentration	1mg/ml (varies by lot)
Sequence Length	357
Applicable Applications for anti-MAPK3 antibody	ELISA, IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human ERK1/2
Fragment	Fab fragment
Conjugation	Unconjugated
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.



IHC (Immunohistochemistry)
AAA328875 at 1/100 staining Mouse liver tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22Å°C. An HRP conjugated goat anti-Mouse antibody was used as the secondary antibody.



WB (Western Blot)
Western blot analysis of extracts from various samples, using p44/42 MAPK (Erk1/2) Mouse monoclonal Antibody. Lane 1: 3T3 treated with blocking peptide; Lane 2: 3T3; Lane 3: Rat brain.

Related Product Information for anti-MAPK3 antibody

Mitogen-activated protein kinases (MAPKs) are a widely conserved family of serine/threonine protein kinases involved in many cellular programs such as cell proliferation, differentiation, motility, and death. The p44/42 MAPK (Erk1/2) signaling pathway can be activated in response to a diverse range of extracellular stimuli including mitogens, growth factors, and cytokines and is an important target in the identification and treatment of cancer. Upon stimulation, a sequential three-part protein kinase cascade is initiated, consisting of a MAP kinase kinase kinase (MAPKKK or MAP3K), a MAP kinase kinase (MAPKK or MAP2K), and a MAP kinase (MAPK). Multiple p44/42 MAP3Ks have been identified, including members of the Raf family as well as Mos and Tpl2/Cot. MEK1 and MEK2 are the primary MAPKKs in this pathway. MEK1 and MEK2 activate p44 and p42 through phosphorylation of activation loop residues Thr202/Tyr204 and Thr185/Tyr187, respectively. Several downstream targets of p44/42 have been identified, including p90RSK and the transcription factor Elk-1. p44/42 are negatively regulated by a family of dual-specificity (Thr/Tyr) MAPK phosphatases, known as DUSPs or MKPs, along with MEK inhibitors such as U0126 and PD98059.

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 plays also 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, 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 respons 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).Acts as a transcriptional repressor. Binds to a [GC]AAA[GC] consensus sequence. Repress the expression of interferon gamma-induced genes. Seems to bind to the promoter of CCL5, DMP1, IFIH1, IFITM1, IRF7, IRF9, LAMP3, OAS1, OAS2, OAS3 and STAT1. Transcriptional activity is independent of kinase activity.

Post Translational Modifications: Phosphorylated upon KIT and FLT3 signaling (By similarity). Dually phosphorylated on Thr-185 and Tyr-187, which activates the enzyme. Undergoes regulatory phosphorylation on additional residues such as Ser-246 and Ser-248 in the kinase insert domain (KID) These phosphorylations, which are probably mediated by more than one kinase, are important for binding of MAPK1/ERK2 to importin-7 (IPO7) and its nuclear translocation. In addition, autophosphorylation of Thr-190 was shown to affect the subcellular localization of MAPK1/ERK2 as well. Ligand-activated ALK induces tyrosine phosphorylation. Dephosphorylated by PTPRJ at Tyr-187. Phosphorylation on Ser-29 by SGK1 results in its activation by enhancing its interaction with MAP2K1/MEK1 and MAP2K2/MEK2. DUSP3 and DUSP6 dephosphorylate specifically MAPK1/ERK2 and MAPK3/ERK1 whereas DUSP9 dephosphorylates a broader range of MAPKs. Dephosphorylated by DUSP1 at Thr-185 and Tyr-187.ISGylated.

Subcellular Location: Cytoplasm>Cytoskeleton>Spindle. Nucleus. Cytoplasm>Cytoskeleton>Microtubule organizing center>Centrosome. Cytoplasm. Membrane>Caveola. 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.

Subunit Structure: Binds both upstream activators and downstream substrates in multimolecular complexes. This interaction inhibits its tyrosine-kinase activity. Interacts with ADAM15, ARHGEF2, ARRB2, DAPK1 (via death domain), HSF4, IER3, IPO7, DUSP6, NISCH, SGK1, and isoform 1 of NEK2. Interacts (phosphorylated form) with CAV2 ('Tyr-19'-phosphorylated form); the interaction, promoted by insulin, leads to nuclear location and MAPK1 activation. Interacts with MORG1, PEA15 and MKNK2 (By similarity). MKNK2 isoform 1 binding prevents from dephosphorylation and inactivation (By similarity). Interacts with DCC (By similarity). The phosphorylated form interacts with PML (isoform PML-4). Interacts with STYX. Interacts with CDK2AP2. Interacts with CAVIN4 (By similarity). Interacts with DUSP7; the interaction enhances DUSP7 phosphatase activity (PubMed:9788880).(Microbial infection) Interacts with HIV-1 Nef through its SH3 domain.

Similarity: The TXY motif contains the threonine and tyrosine residues whose phosphorylation activates the MAP kinases.Belongs to the protein kinase superfamily. CMGC Ser/Thr protein kinase family. MAP kinase subfamily.

NCBI AND UNIPROT INFORMATION

NCBI GI #	91718897
NCBI GeneID	5595
NCBI Accession #	NP_001035145.1
NCBI GenBank Nucleotide #	NP_001035145.1
UniProt Accession #	P27361; P28482
Molecular Weight	Observed Molecular Weight: (Observed)42kD, 44kD. Predicted Molecular Weight: (Calculated)43kDa, 41kDa.
NCBI Official Full Name	mitogen-activated protein kinase 3 isoform 2
NCBI Official Synonym Full Names	mitogen-activated protein kinase 3
NCBI Official Symbol	MAPK3
NCBI Official Synonym Symbols	ERK1; ERT2; ERK-1; PRKM3; P44ERK1; P44MAPK; HS44KDAP; HUMKER1A; p44-ERK1; p44-MAPK
NCBI Protein Information	mitogen-activated protein kinase 3
UniProt Protein Name	Mitogen-activated protein kinase 3
UniProt Gene Name	MAPK3
UniProt Synonym Gene Names	ERK1; PRKM3; MAP kinase 3; MAPK 3; ERK-1; p44-MAPK
UniProt Entry Name	MK03_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/monoclonal/p44-42-mapk-erk1-2-antibody-immunohistochemistry-western-blot-elisa/328875>