

Rabbit ERK1/2 Polyclonal Antibody | anti-ERK1/2 antibody

Phospho-ERK1/2 (Thr202+Tyr204/Thr185+Tyr187) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA31416	Rabbit	Human, Mouse, Rat, Monkey Predicted Reactivity: Pig (100%), Zebrafish (100%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (100%)	Western Blot, Immunohistochemistry, ELISA

PRODUCT SYNONYMS

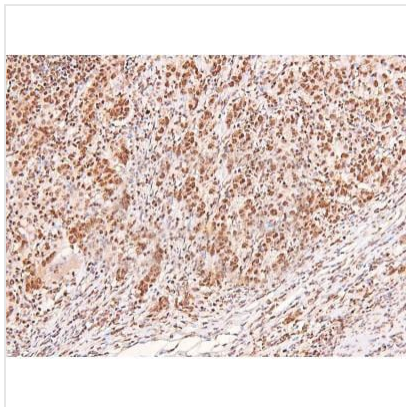
ERK1/2; Polyclonal Antibody; Phospho-ERK1/2 (Thr202+Tyr204/Thr185+Tyr187) Antibody; ERK 1; ERK; ERK-1; ERK1; ERT 2; ERT2; Extracellular Signal Regulated Kinase 1; Extracellular signal related kinase 1; Extracellular signal-regulated kinase 1; HGNC6877; HS44KDAP; HUMKER1A; Insulin Stimulated MAP2 Kinase; 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-ERK1/2 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat, Monkey Predicted Reactivity: Pig (100%), Zebrafish (100%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (100%)
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Phospho-ERK1/2 (Thr202+Tyr204/Thr185+Tyr187) Antibody detects endogenous levels of ERK1/2 only when phosphorylated at Thr202+Tyr204/Thr185+Tyr187.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-ERK1/2 antibody	WB (Western Blot), IHC (Immunohistochemistry), ELISA (Peptide ELISA)
Application Notes	WB: 1:1000-3000 IHC: 1:50-1:200 Peptide ELISA: 1:20,000-1:40,000
Immunogen	A synthesized peptide derived from human ERK1/2 around the phosphorylation site of Thr202+Tyr204/Thr185+Tyr187.
Conjugation	Unconjugated
Fragment	Fab fragment

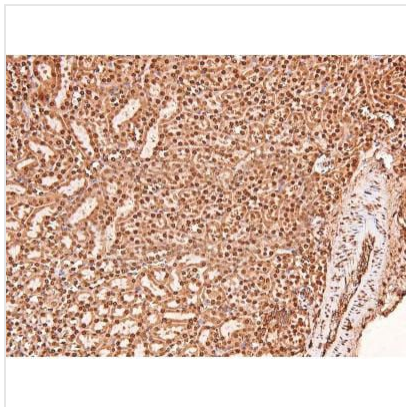
Post Translational Modifications	Phosphorylated upon KIT and FLT3 signaling (By similarity). Dually phosphorylated on Thr-185 and Tyr-187, which activates the enzyme. Undergoes regulatory phosphorylation on additional residues such as Ser-246 and Ser-248 in the kinase insert domain (KID) These phosphorylations, 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.
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. (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.
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.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



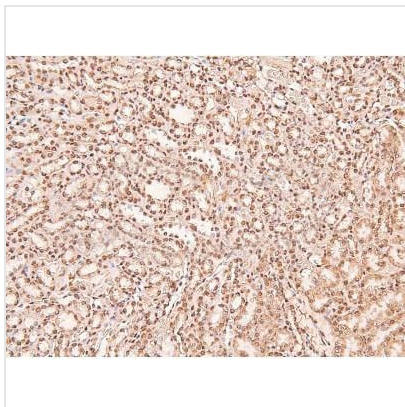
IHC (Immunohistochemistry)

At 1/200 staining Human lung cancer 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 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



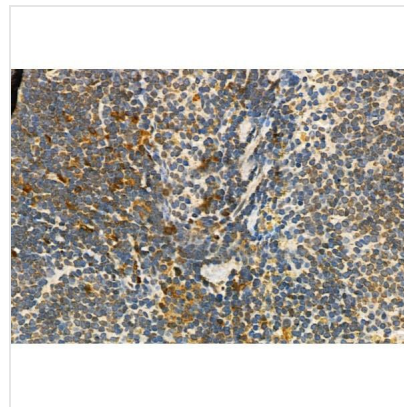
IHC (Immunohistochemistry)

At 1/200 staining Mouse kidney 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 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



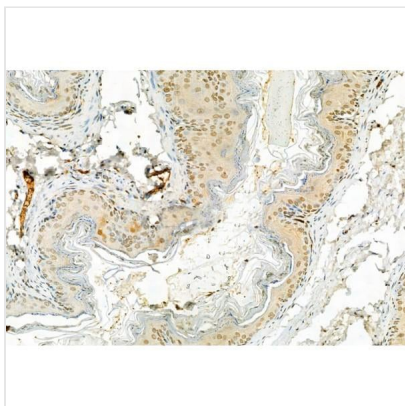
IHC (Immunohistochemistry)

At 1/200 staining Rat kidney 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 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



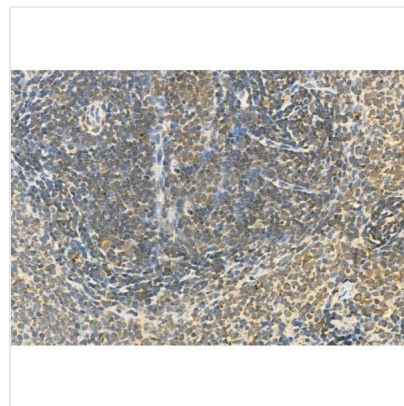
IHC (Immunohistochemistry)

At 1/100 staining Mouse spleen tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunohistochemistry)

At 1/100 staining Mouse stomach tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunohistochemistry)

At 1/100 staining Rat spleen tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

ADDITIONAL INFORMATION

Related Product Information for anti-ERK1/2 antibody	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 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). 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.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	91718897
NCBI GeneID	5595
NCBI Accession #	NP_001035145.1
NCBI GenBank Nucleotide #	NM_001040056.2
UniProt Accession #	P27361; P28482
Molecular Weight	43,136 Da
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; MAPK 1; MAP kinase isoform p44; insulin-stimulated MAP2 kinase; extracellular signal-related kinase 1; extracellular signal-regulated kinase 1; microtubule-associated protein 2 kinase
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.