

phospho-ERK1/2 (Thr202 + Tyr204) Recombinant Rabbit mAb

Catalog # AP100002

Product Information

Host	Rabbit
Clonality	Recombinant
Calculated MW	41 KDa
Physical State	Liquid
Immunogen	KLH conjugated Synthesised phosphopeptide derived from mouse p44/42 MAPK around the phosphorylation site of Thr202/Tyr204
Epitope Specificity	FL(p-T)E(p-Y)VA
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the protein kinase superfamily. CMGC Ser/Thr protein kinase family. MAP kinase subfamily. Contains 1 protein kinase domain.
SUBUNIT	Binds both upstream activators and downstream substrates in multimolecular complexes. Interacts with ADAM15, ARHGEF2, ARRB2, DAPK1 (via death domain), HSF4, IER3, IPO7, DUSP6, NISCH, SGK1, and isoform 1 of NEK2. Interacts (via phosphorylated form) with TPR (via C-terminus region and phosphorylated form); the interaction requires dimerization of MAPK1/ERK2 and increases following EGF stimulation. Interacts (phosphorylated form) with CAV2 ('Tyr-19'-phosphorylated form); the interaction, promoted by insulin, leads to nuclear location and MAPK1 activation. Interacts with DCC. Interacts with MORF1, PEA3 and MKNK2. MKNK2 isoform 1 binding prevents from dephosphorylation and inactivation. The phosphorylated form interacts with PML.
Post-translational modifications	Dually phosphorylated on Thr-183 and Tyr-185, which activate the enzyme. Ligand-activated ALK induces tyrosine phosphorylation. Dephosphorylated by PTPRJ at Tyr-185. Phosphorylated upon FLT3 and KIT signaling.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	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. [provided by RefSeq, Jul 2008].

Additional Information

Other Names	MK03_HUMAN; MAPK3; MAP kinase 3; MAPK 3; ERT2; Extracellular signal-regulated kinase 1 (ERK-1); Insulin-stimulated MAP2 kinase; MAP kinase
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isoform p44 (p44-MAPK); Microtubule-associated protein 2 kinase; p44-ERK1; 2.7.11.24; ERK1; PRKM3; MK01_HUMAN; MAPK1; MAP kinase 1; MAPK 1; ERT1; Extracellular signal-regulated kinase 2 (ERK-2); MAP kinase isoform p42 (p42-MAPK); Mitogen-activated protein kinase 2 (MAP kinase 2 | MAPK 2); ERK2; PRKM1; PRKM2; ERK; ERK-2; MAPK2; NS13; P42MAPK; p38; p40; p41; p41mapk; p42-MAPK; ERK-1; HS44KDAP; HUMKER1A; P44ERK1; P44MAPK; p44-MAPK; mitogen-activated protein kinase 3; ERK1 & ERK2 (phospho-T202/Y204); p-ERK1 & ERK2; phospho-ERK1 & ERK2; ERK1 & ERK2 (phospho-Thr202/Tyr204); p44/42

Dilution	Flow-Cyt=1:50-100,ICC/IF=1:50-200
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
Name	phospho-ERK1/2 (Thr202 + Tyr204) Recombinant Rabbit mAb
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 of the MAPK/ERK signal to additional cytosolic and nuclear targets, thereby extending the specificity of the cascade. Mediates phosphorylation of TP53 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 (By similarity). Acts as a transcriptional repressor. Binds to a [GC]AAA[GC] consensus sequence. Represses 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.

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