MAPK1 Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	ERK2 (MAPK1), Polyclonal Antibody
Full Product Name	Anti-ERK2 Antibody, Rabbit Polyclonal
Product Gene Name	anti-MAPK1 antibody
Product Synonym Names	ERK2/MAPK1/MAPK2 Antibody, Rabbit PAb; mitogen-activated protein kinase 1; Anti-ERK Antibody; Anti-ERK-2 Antibody; Anti-ERK2 Antibody; Anti-ERT1 Antibody; Anti-MAPK2 Antibody; Anti-p38 Antibody; Anti-p40 Antibody; Anti-p41 Antibody; Anti-p41mapk Antibody; Anti-p42-MAPK Antibody; Anti-P42MAPK Antibody; Anti-PRKM1 Antibody; Anti-PRKM2 Antibody
Clonality	Polyclonal
Isotype	Rabbit IgG
Host	Rabbit
Species Reactivity	Human
Form/Format	Liquid; 0.2um filtered solution in PBS
Purity/Purification	Protein A
Specificity	Human ERK2/MAPK1/MAPK2
Preparation and Storage	This antibody can be stored at 2-8 degree C for one month without detectable loss of activity. Antibody products are stable for twelve months from date of receipt when stored at -20 degree C to -80 degree C. Preservative-Free. Avoid repeated freeze-thaw cycles.
Molecular Weight	41,390 Da
Chromosome Location	Chromosome: 22; NC_000022.10 (22113946..22221970, complement). Location: 22q11.21
OMIM	176948
3D Structure	ModBase 3D Structure for P28482
Immunogen	Recombinant Human ERK2/MAPK1/MAPK2 Protein
Conjugation	Unconjugated
Preparation	Produced in rabbits immunized with purified, recombinant Human ERK2/MAPK1/MAPK2 (rh ERK2/MAPK1/MAPK2). Total IgG was purified by Protein A affinity chromatography.
Product Categories/Family for anti-MAPK1 antibody	Cancer Drug Targets; Death Receptor Signaling
Applications Tested/Suitable for anti-MAPK1 antibody	ELISA (EIA)
Application Notes for anti-MAPK1 antibody	ELISA: 1:1000-1:2000

Related Product Information for anti-MAPK1 antibody	MAP kinases, also known as extracellular signal-regulated kinases (ERKs), act as an integration point for multiple biochemical signals and are involved in a wide variety of cellular processes such as proliferation, differentiation, transcription regulation, and development. ERK is a versatile protein kinase that regulates many cellular functions. Growing evidence suggests that extracellular signal-regulated protein kinase 1/2 (ERK1/2) plays a crucial role in promoting cell death in a variety of neuronal systems, including neurodegenerative diseases. It is believed that the magnitude and the duration of ERK1/2 activity determine its cellular function. Activation of ERK1/2 is implicated in the pathophysiology of spinal cord injury (SCI). ERK2 signaling is a novel target associated with the deleterious consequences of spinal injury. ERK-2, also known as mitogen-activated protein kinase 1 (MAPK1), is a member of the protein kinase superfamily and MAP kinase subfamily. MKP-3 is a dual-specificity phosphatase exclusively specific to MAPK1 for its substrate recognition and dephosphorylating activity. The activation of MAPK1 requires its phosphorylation by upstream kinases. Upon activation, MAPK1 translocates to the nucleus of the stimulated cells, where it phosphorylates nuclear targets. MAPK1 is involved in both the initiation and regulation of meiosis, mitosis, and postmitotic functions in differentiated cells by phosphorylating some transcription factors such as ELK1. MAPK1 acts as a transcriptional repressor that represses the expression of interferon gamma-induced genes. Transcriptional activity is independent of kinase activity. The nuclear-cytoplasmic distribution of ERK2 is regulated in response to various stimuli and changes in a cell context. Furthermore, the nuclear flux of ERK2 occurs by several energy-and carrier-dependent and -independent mechanisms. ERK2 has been shown to translocate into and out of the nucleus by facilitated diffusion through the nuclear pore, interacting directly with proteins within the nuclear pore complex, as well as by karyopherin-mediated transport. ERK2 interacts with the PDE4 catalytic unit by binding to a KIM (kinase interaction motif) docking site located on an exposed beta-hairpin loop and an FQF (Phe-Gln-Phe) specificity site located on an exposed alpha-helix. These flank a site that allows phosphorylation by ERK, the functional outcome of which is orchestrated by the N-terminal UCR1/2 (upstream conserved region 1 and 2) modules.
Product References and Citations for anti-MAPK1 antibody	Houslay MD, et al. (2003) The role of ERK2 docking and phosphorylation of PDE4 cAMP phosphodiesterase isoforms in mediating cross-talk between the cAMP and ERK signalling pathways. Biochem Soc Trans. 31(Pt 6): 1186-90. Jivan A, et al. (2010) Reconstitution of the Nuclear Transport of the MAP Kinase ERK2. Methods Mol Biol. 661: 273-85. Yu CG, et al. (2010) Involvement of ERK2 in traumatic spinal cord injury. J Neurochem. 113(1): 131-42. Subramaniam S, et al. (2010) ERK and cell death: ERK1/2 in neuronal death. FEBS J. 277(1): 22-9.
Other Notes	Small volumes of anti-MAPK1 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for MAPK1 purchase	MBS8100231 is an antibody targeting MAPK1. Also known as Anti-ERK2 Antibody, Rabbit Polyclonal. Reactive in Human. Host: Rabbit.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for MAPK1. It may not necessarily be applicable to this product.

NCBI GI #	66932916
NCBI GeneID	5594
NCBI Accession #	NP_002736.3
UniProt Primary Accession #	P28482
UniProt Related Accession #	P28482
GenBank Nucleotide #	NM_002745.4
NCBI Official Full Name	mitogen-activated protein kinase 1
NCBI Official Synonym Full Names	mitogen-activated protein kinase 1
NCBI Official Symbol	MAPK1
NCBI Official Synonym Symbols	ERK; p38; p40; p41; ERK2; ERT1; MAPK2; PRKM1; PRKM2; P42MAPK; p41mapk
UniProt Protein Name	Mitogen-activated protein kinase 1
UniProt Synonym Protein Names	ERT1; Extracellular signal-regulated kinase 2; ERK-2; MAP kinase isoform p42; p42-MAPK; Mitogen-activated protein kinase 2

Protein Family	Extracellular signal-regulated kinase
UniProt Gene Name	MAPK1
UniProt Synonym Gene Names	ERK2; PRKM1; PRKM2; MAP kinase 1; MAPK 1; ERK-2; p42-MAPK; MAP kinase 2; MAPK 2
UniProt Entry Name	MK01_HUMAN
NCBI Protein Information	mitogen-activated protein kinase 1; ERK-2; MAPK 2; p42-MAPK; MAP kinase 1; MAP kinase 2; MAP kinase isoform p42; protein tyrosine kinase ERK2; mitogen-activated protein kinase 2; extracellular signal-regulated kinase 2
NCBI Summary for MAPK1	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 as an integration point for multiple biochemical signals, and are involved in a wide variety of cellular processes such as proliferation, differentiation, transcription regulation and development. The activation of this kinase requires its phosphorylation by upstream kinases. Upon activation, this kinase translocates to the nucleus of the stimulated cells, where it phosphorylates nuclear targets. Two alternatively spliced transcript variants encoding the same protein, but differing in the UTRs, have been reported for this gene. [provided by RefSeq, Jul 2008]
UniProt Comments for MAPK1	ERK2: a serine/threonine kinase of the GMGC group that plays a critical role in the regulation of cell growth and differentiation. ERK1 (MAPK3) and ERK2 (MAPK1) play central roles in MAPK cascades and are activated by a wide variety of extracellular signals including growth and neurotrophic factors, cytokines, hormones and neurotransmitters. Depending on the cellular context, MAPK cascades mediate diverse biological functions such as cell growth, adhesion, survival and differentiation through the regulation of transcription, translation, cytoskeletal rearrangements. MAPK cascades also plays a role in initiation and regulation of meiosis, mitosis, and postmitotic functions in differentiated cells by phosphorylating a number of transcription factors. Activation of MAP kinases occurs through phosphorylation of threonine and tyrosine residues at the sequence T*EY* by upstream MAP kinase kinases, MEK1 and -2. Phosphorylation of both the threonine and tyrosine are required for activity. This phosphorylation causes dramatic conformational changes, which enable full activation and interaction of MAPK1/ERK2 with its substrates. Protein type: Protein kinase, Ser/Thr (non-receptor); Kinase, protein; Protein kinase, CMGC; EC 2.7.11.24; CMGC group; MAPK family; MAPK/ERK subfamily; ERK subfamily Chromosomal Location of Human Ortholog: 22q11.21 Cellular Component: dendrite cytoplasm; Golgi apparatus; protein complex; focal adhesion; mitochondrion; early endosome; perikaryon; pseudopodium; caveola; cytosol; nucleoplasm; microtubule cytoskeleton; cytoskeleton; axon; late endosome; cytoplasm; microtubule organizing center; nucleus Molecular Function: RNA polymerase subunit kinase activity; MAP kinase activity; protein serine/threonine kinase activity; protein binding; DNA binding; phosphotyrosine binding; mitogen-activated protein kinase kinase kinase binding; transcription factor binding; ATP binding; phosphatase binding Biological Process: nerve growth factor receptor signaling pathway; activation of MAPKK activity; viral reproduction; activation of MAPK activity; positive regulation of transcription, DNA-dependent; response to toxin; stress-activated MAPK cascade; toll-like receptor 3 signaling pathway; sensory perception of pain; protein amino acid phosphorylation; T cell receptor signaling pathway; toll-like receptor 5 signaling pathway; B cell receptor signaling pathway; regulation of transcription factor activity; small GTPase mediated signal transduction; toll-like receptor 4 signaling pathway; platelet activation; fibroblast growth factor receptor signaling pathway; transcription, DNA-dependent; toll-like receptor 2 signaling pathway; regulation of stress-activated MAPK cascade; nuclear translocation of MAPK; organ morphogenesis; response to estrogen stimulus; toll-like receptor 9 signaling pathway; regulation of cytoskeleton organization and biogenesis; axon guidance; positive regulation of translation; apoptosis; regulation of protein stability; chemotaxis; signal transduction; toll-like receptor 10 signaling pathway; synaptic transmission; response to exogenous dsRNA; positive regulation of cell proliferation; lipopolysaccharide-mediated signaling pathway; response to stress; epidermal growth factor receptor signaling pathway; MyD88-independent toll-like receptor signaling pathway; peptidyl-threonine phosphorylation; MAPKKK cascade; mammary gland epithelial cell proliferation; cell cycle; MyD88-dependent toll-like receptor signaling pathway; negative regulation of cell differentiation; peptidyl-serine phosphorylation; cytosine metabolic process; Ras protein signal transduction; insulin receptor signaling pathway; toll-like receptor signaling pathway; innate immune response; blood coagulation; vascular endothelial growth factor receptor signaling pathway; response to DNA damage stimulus; positive regulation of cell migration
Research Articles on MAPK1	**1.** ribotoxic stress activates the human pyrin inflammasome through a mechanism that requires p38 MAPK signaling and microtubule stability.

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