

Anti-ERK2 Antibody

Catalog # ABO10636

Product Information

Application	WB
Primary Accession	P28482
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Mitogen-activated protein kinase 1(MAPK1) detection. Tested with WB in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

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, ERK2, PRKM1, PRKM2
Calculated MW	41390
Application Details	Western blot, 0.1-0.5 µg/ml, Human, Rat, Mouse
Subcellular Localization	Cytoplasm, cytoskeleton, spindle . Nucleus. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm. 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. .
Source	Eukaryota
Protein Name	Mitogen-activated protein kinase 1(MAP kinase 1/MAPK 1)
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human ERK2(348-360aa FEETARFQPGYRS), identical to the related rat and mouse sequences.
Purification	Immunogen affinity purified.

Cross Reactivity	No cross reactivity with other proteins
Storage	At -20° C for one year. After r° Constitution, at 4° C for one month. It° Can also be aliquotted and stored frozen at -20° C for a longer time.Avoid repeated freezing and thawing.
Sequence Similarities	Belongs to the protein kinase superfamily. CMGC Ser/Thr protein kinase family. MAP kinase subfamily.

Protein Information

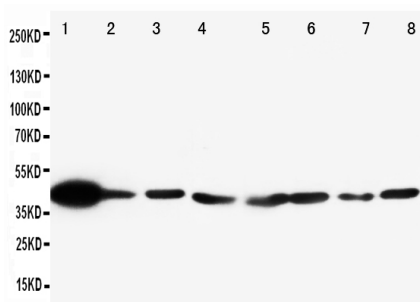
Name	MAPK1 (HGNC:6871)
Synonyms	ERK2, PRKM1, PRKM2
Function	Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. MAPK1/ERK2 and MAPK3/ERK1 are the 2 MAPKs which play an important role in the MAPK/ERK cascade. They participate also in a signaling 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, GLI1 or GRB10) (PubMed:35831023). 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). Phosphorylates GJA1 at 'Ser-279' and 'Ser- 282' resulting in an increase in GJA1 ubiquitination and ultimately lysosomal degradation (By similarity). Acts as a positive regulator of smoothened signaling by mediating phosphorylation of GLI1 in response to smoothened activation, promoting its dissociation from SUFU inhibitor and translocation to the nucleus (PubMed:35831023).
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.

Background

Mitogen-activated protein kinase 1, also known as MAPK1, p42MAPK, and ERK2, is an enzyme which in humans is encoded by the MAPK1 gene. The gene is mapped to 22q11.2. And The protein encoded by this gene is a member of the MAP kinase family. The deduced 360-amino acid human ERK2 protein shares 98% identity with rat Erk2. The MAP kinase ERK2 is widely involved in eukaryotic signal transduction. Upon activation, it translocates to the nucleus of the stimulated cell, where it phosphorylates nuclear targets. Furthermore, the ERK pathway is necessary for experience-dependent plasticity and for long-term potentiation of synaptic transmission in the developing visual cortex. And the MAPK pathway is also involved in responses to NTN1.

Images



Anti-ERK2 antibody, ABO10636, Western blotting
Lane 1: Rat Brain Tissue Lysate
Lane 2: Rat Lung Tissue Lysate
Lane 3: Rat Placenta Tissue Lysate
Lane 4: HT1080 Cell Lysate
Lane 5: HELA Cell Lysate
Lane 6: MM231 Cell Lysate
Lane 7: RAJI Cell Lysate
Lane 8: COLO320 Cell Lysate

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