

**Anti-ERK2 (MOUSE) Monoclonal Antibody**  
**ERK2 Internal Antibody**  
**Catalog # ASR4234****Specification**

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**Anti-ERK2 (MOUSE) Monoclonal Antibody - Product Information**

Host	<b>Mouse</b>
Conjugate	<b>Unconjugated</b>
Target Species	<b>Human</b>
Reactivity	<b>Rat, Human, Mouse</b>
Clonality	<b>Monoclonal</b>
Application	<b>WB, E, I, LCI</b>
Application Note	<b>Anti-ERK 2 (MOUSE) antibody has been tested by ELISA and Western Blotting. Specific conditions of reactivity should be optimized by the end user. Expect a band of approximately 41 kDa.</b>
Physical State	<b>Liquid (sterile filtered)</b>
Buffer	<b>0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2</b>
Immunogen	<b>Anti-ERK2 Monoclonal Antibody was produced in mice by repeated immunizations with synthetic peptide corresponding to amino acid residues near an internal region of ERK2 conjugated to KLH.</b>
Preservative	<b>0.01% (w/v) Sodium Azide</b>

**Anti-ERK2 (MOUSE) Monoclonal Antibody - Additional Information****Gene ID** 5594**Purity**

This protein A purified mouse monoclonal antibody reacts specifically with human ERK2. Anti-ERK2 is purified from tissue culture supernatant by protein A purification. Cross reactivity is expected to occur with human, mouse, and rat based on sequence identity of the peptide immunogen. This antibody does not react with the ERK1 isoform.

**Storage Condition**

Store vial at -20° C prior to opening. This product is stable at 4° C as an undiluted liquid. For extended storage, aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Dilute only prior to immediate use.

**Precautions Note**

This product is for research use only and is not intended for therapeutic or diagnostic applications.

**Anti-ERK2 (MOUSE) Monoclonal Antibody - 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 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). 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:<a href="http://www.uniprot.org/citations/26942675" target="\_blank">26942675</a>).

### Cellular Location

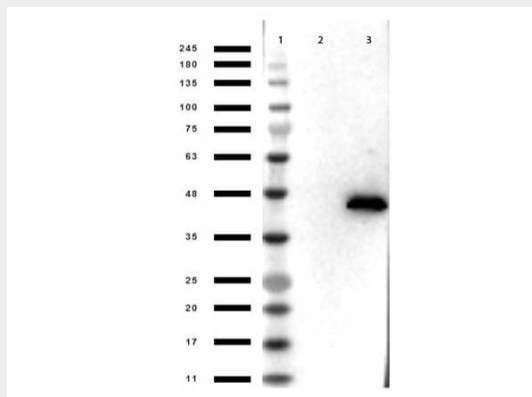
Cytoplasm, cytoskeleton, spindle. Nucleus. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm. Membrane, caveola {ECO:0000250|UniProtKB:P63086}. Cell junction, focal adhesion {ECO:0000250|UniProtKB:P63085}. Note=Associated with the spindle during prometaphase and metaphase (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.

### Anti-ERK2 (MOUSE) Monoclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## Anti-ERK2 (MOUSE) Monoclonal Antibody - Images



Western Blot of Mouse anti-ERK2 Antibody. Lane 1: Opal Pre-Stained Molecular Weight Ladder (p/n MB-210-0500). Lane 2: ERK1 50ng. Lane 3: ERK2 50ng. Primary Antibody: Anti-ERK2 (internal) Monoclonal Antibody at 1  $\mu\text{g}/\text{mL}$ . Secondary Antibody: Rabbit anti-Mouse IgG HRP (p/n 610-403-C46) at 1:40,000. Blocking Buffer: BlockOut (p/n MB-073) for 30 min at RT. Expect:  $\sim 41\text{kDa}$  seen in lane 3 only.

## Anti-ERK2 (MOUSE) Monoclonal Antibody - Background

ERK2 antibodies detect the ERK2 isoform. Mitogen activated protein kinase 1, also known as MAPK1, ERK, or ERK2, is an integral component of the MAP kinase cascade that regulates cell growth and differentiation. ERK1 and ERK2 are activated by MEK1 and MEK2 in the B-raf signaling pathway resulting in its translocation to the nucleus where it phosphorylates nuclear targets. Human ERK1 and ERK2 are 84% identical in sequence and share common functionality in cells. Anti-ERK2 antibody is ideal for investigators involved in Neuroscience, Cell Signaling and Cancer Research.