

**Anti-p44 MAP Kinase (ERK1) (RABBIT) Antibody**  
**p44 Map Kinase Antibody**  
**Catalog # ASR5364****Specification**

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**Anti-p44 MAP Kinase (ERK1) (RABBIT) Antibody - Product Information**

Host	Rabbit
Conjugate	Unconjugated
Target Species	Human
Reactivity	Mouse
Clonality	Polyclonal
Application	WB, E, IP, I, LCI
Application Note	This affinity purified antibody has been tested for use in ELISA, immunoprecipitation and by western blot. Specific conditions for reactivity should be optimized by the end user. Expect a predominant band approximately 44 kDa in size corresponding to p44 MAP Kinase (ERK1) by western blotting in the appropriate cell lysate or extract.
Physical State	Liquid (sterile filtered)
Buffer	0.1 M Tris Chloride, 0.5 M Sodium Chloride, pH 8.0
Immunogen	This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to the carboxy terminal end of human p44 MAP Kinase (ERK1) protein.
Preservative	0.01% (w/v) Sodium Azide

**Anti-p44 MAP Kinase (ERK1) (RABBIT) Antibody - Additional Information****Gene ID** 5595**Other Names**  
5595**Purity**

This affinity-purified antibody is directed against the human p44 MAP Kinase (ERK1) protein. The product was affinity purified from monospecific antiserum by immunoaffinity purification. A BLAST analysis was used to suggest cross reactivity with p44 MAP Kinase (ERK1) proteins from human, bovine, rabbit, rat and mouse. No reactivity is observed against p42 MAP Kinase (ERK2). Reactivity against homologues from other sources is not known.

**Storage Condition**

Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted

liquid. 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-p44 MAP Kinase (ERK1) (RABBIT) Antibody - Protein Information**

**Name** MAPK3

**Synonyms** ERK1, PRKM3

#### **Function**

Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway (PubMed:<a href="http://www.uniprot.org/citations/34497368" target="\_blank">34497368</a>). 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 a variety of other signaling-related molecules (like ARHGEF2, DEPTOR, FRS2 or GRB10) (PubMed:<a href="http://www.uniprot.org/citations/35216969" target="\_blank">35216969</a>). 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.

#### **Cellular Location**

Cytoplasm {ECO:0000250|UniProtKB:P21708}. Nucleus. Membrane, caveola {ECO:0000250|UniProtKB:P21708}. Cell junction, focal adhesion {ECO:0000250|UniProtKB:Q63844} Note=Autophosphorylation at Thr-207 promotes nuclear localization (PubMed:19060905). PEA15-binding redirects the biological outcome of MAPK3 kinase-signaling by sequestering MAPK3 into the cytoplasm (By similarity). {ECO:0000250|UniProtKB:Q63844, ECO:0000269|PubMed:19060905}

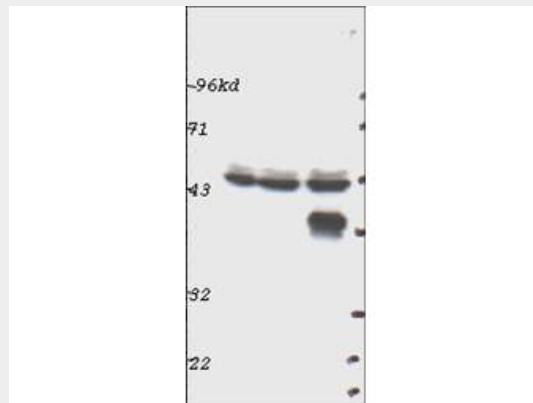
### **Anti-p44 MAP Kinase (ERK1) (RABBIT) Antibody - Protocols**

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-p44 MAP Kinase (ERK1) (RABBIT) Antibody - Images**



Western blot using Rockland's Affinity Purified anti-p44 MAP Kinase (ERK1) antibody shows detection of ERK1 in whole cell lysates prepared from mouse brain (left), mouse kidney (center) and mouse intestine (right).

#### **Anti-p44 MAP Kinase (ERK1) (RABBIT) Antibody - Background**

Cell proliferation is regulated in several contexts, for example during development, tissue differentiation, wound healing and immune responses. In mammalian cells, proliferative signals lead to the activation of a protein kinase cascade, resulting in the phosphorylation of two closely related Mitogen-Activated Protein Kinases (MAPK's) ERK1 and ERK2 of 44 kDa and 42 kDa, respectively. When activated, ERK's form dimers that translocate to the nucleus where they phosphorylate several classes of transcription factors which are involved in the up-regulation of immediate early genes. As such, ERK1 and ERK2 represent a paradigm for a growing family of proline-directed protein kinases that mediate entry, progression and exit from the cell cycle in diverse eukaryotic cells. These enzymes function within highly conserved cascade of sequentially activating protein kinases that transduce signals from diverse extracellular stimuli. Alternative splice transcript variants encoding different protein isoforms have been described. ERK1 and ERK2 are phosphorylated within the activation loop on both a Threonine and a Tyrosine residue (within a Thr-Glu-Tyr motif) by MEKs (MAPK/ERK kinases), thereby greatly elevating the activity of ERK1&2.