

**Phospho-Erk1/2 Antibody**  
**Rabbit Polyclonal Antibody**  
**Catalog # ABV10320**

**Specification**

**Phospho-Erk1/2 Antibody - Product Information**

Application	WB, IHC, IP
Primary Accession	<a href="#">P63086</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	41276

**Phospho-Erk1/2 Antibody - Additional Information**

**Gene ID** 116590

Application & Usage	Western blotting (0.5-4 µg/ml), immunoprecipitation(10-20 µg/ml), and Immunohistochemistry (10-20 µg/ml). However, the optimal concentrations should be determined individually. The antibody recognizes Phosphorylated p42 and p44 (Erk1 and Erk2).
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**Other Names**

MAPK1, p38, ERK , P42MAPK, ERK2 , p40 , PRKM1 , p41mapk , PRKM2, MAPK2 , p42-MAPK, p41 , ERK-2, ERT1

**Target/Specificity**

Phospho-Erk1/2 (p44/p42 MAPK)

**Antibody Form**

Liquid

**Appearance**

Colorless liquid

**Formulation**

100 µg (0.5 mg/ml) purified rabbit polyclonal antibody in phosphate-buffered saline (PBS) containing 50% glycerol, 1% BSA, and 0.02% thimerosal.

**Handling**

The antibody solution should be gently mixed before use.

**Reconstitution & Storage**

-20 °C

## Background Descriptions

### Precautions

Phospho-Erk1/2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### Phospho-Erk1/2 Antibody - Protein Information

**Name** Mapk1 {ECO:0000312|RGD:70500}

**Synonyms** Erk2, Mapk, Prkm1

### 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 of 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 (By similarity). Phosphorylates CDK2AP2 (PubMed:<a href="http://www.uniprot.org/citations/12944431" target="\_blank">12944431</a>). Phosphorylates phosphoglycerate kinase PGK1 under hypoxic conditions to promote its targeting to the mitochondrion and suppress the formation of acetyl-coenzyme A from pyruvate (By similarity). Phosphorylates GJA1 at 'Ser-279' and 'Ser-282' resulting in an increase in GJA1 ubiquitination and ultimately lysosomal degradation (PubMed:<a href="http://www.uniprot.org/citations/29959233" target="\_blank">29959233</a>).

### Cellular Location

Cytoplasm, cytoskeleton, spindle. Nucleus. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm. Membrane, caveola. Cell junction, focal adhesion {ECO:0000250|UniProtKB:P63085}. Note=Associated with the spindle during prometaphase and metaphase. PEA15-binding and phosphorylated DAPK1 promote its cytoplasmic retention. Phosphorylation at Ser- 244 and Ser- 246 as well as autophosphorylation at Thr-188 promote nuclear localization.

**Tissue Location**

Highest levels within the nervous system, expressed in different tissues, mostly in muscle, thymus and heart

**Phospho-Erk1/2 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](#)

**Phospho-Erk1/2 Antibody - Images****Phospho-Erk1/2 Antibody - Background**

Both p44 and p42 MAP kinases (Erk1 and Erk2) function in a protein kinase cascade that plays a critical role in the regulation of cell growth and differentiation. Activation of MAP kinases occurs through phosphorylation of threonine and tyrosine (202 and 204 of human MAP kinase [Erk1] or 183 and 185 of rat Erk2) at the sequence T\*EY\* by a single upstream MAP kinase kinase (MEK). Both kinases are known to weakly autophosphorylate on tyrosine.