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Anti-Erk2 (RABBIT) Antibody
ERK2 Antibody
Catalog # ASR3681

Specification

Anti-Erk2 (RABBIT) Antibody - Product Information

Host	**Rabbit**
Conjugate	**Unconjugated**
Target Species	**Human**
Reactivity	**Human, Mouse**
Clonality	**Polyclonal**
Application	**WB, E, IP, I, LCI**
Application Note	**This antiserum was tested for use in ELISA and by western blot. Specific conditions for reactivity should be optimized by the end user. Expect a predominant band approximately 42 kDa in size corresponding to p42 MAP Kinase (ERK2) by western blotting in the appropriate cell lysate or extract. p42 MAP Kinase (ERK2) is a ubiquitous protein kinase target for Ras and Raf. The following cell lines have been assayed by immunoblot and were found to be positive for p42 MAP Kinase (ERK2) using this reagent: U937, HeLa, NIH-3T3, RAW 264.7, LNCaP and HEK whole cell lysates.**
Physical State	**Liquid (sterile filtered)**
Buffer	**0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2**
Immunogen	**Anti-Erk2 antibody was prepared by repeated immunizations with an Erk2 containing fusion protein. The epitope maps near the carboxy-terminus of human p42 MAP Kinase (ERK2) protein. The epitope is identical to the corresponding sequence in mouse and differs from the rat sequence by a single, conservative amino acid substitution.**
Preservative	**0.01% (w/v) Sodium Azide**

Anti-Erk2 (RABBIT) Antibody - Additional Information

Gene ID 5594

Other Names
5594

Purity
This antiserum is directed against human p42 MAP Kinase (ERK2) protein and is useful in

determining its presence by immunoblotting. No reactivity is observed against p44 MAP Kinase (ERK1). Cross reactivity is expected with p44 MAP Kinase (ERK1) proteins from human and mouse sources. Reactivity to rat tissues is also anticipated due to high sequence homology. 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-Erk2 (RABBIT) 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:26942675).

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

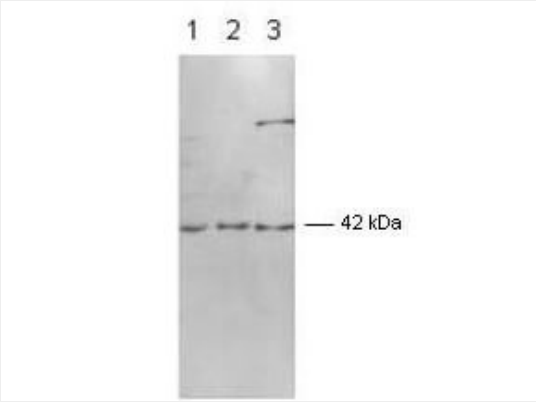
during prometaphase and metaphase (By similarity). PEA15-binding and phosphorylated DAPK1 promote its cytoplasmic retention. Phosphorylation at Ser- 246 and Ser-248 as well as autophosphorylation at Thr-190 promote nuclear localization.

Anti-Erk2 (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 Cytomety
- Cell Culture

Anti-Erk2 (RABBIT) Antibody - Images



Western blot using Rockland's Affinity Purified anti-p42 MAP Kinase (ERK2) antibody shows detection of ERK2 in several whole cell lysates. Lane 1: HeLa (p/n W09-000-364), Lane 2: A431 (p/n W09-000-361), and Lane 3: NIH3T3 (p/n W10-000-358). Primary antibody: Anti-p42 at 1:1,000. Secondary antibody: HRP Goat-a-Rabbit 1:4,000 dilution with visualization via ECL. Film exposure was approximately 1'. Other detection systems will yield similar results.

Anti-Erk2 (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. In vertebrates the mitogen-induced sequential activation of the kinases Raf1->Mek1->Erk2->Rsk

occurs via the G-protein Ras.