

ARG52277 anti-ERK1 + ERK2 phospho (Thr202 / Tyr204) antibody

Package: 100 µl, 50 µl
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes ERK1 + ERK2 phospho (Thr202 / Tyr204)
Tested Reactivity	Hu, Ms, Rat, Dog
Predict Reactivity	Bov, Chk, NHuPrm, Xenopus laevis, Zfsh
Tested Application	ICC/IF, IHC-P, WB
Specificity	Specific for the ~42k - 44k ERK/MAPK phosphorylated at Thr202 and Tyr204 at p44 (ERK1), and Thr185 and Tyr187 at p42 (ERK2). Immunolabeling is blocked by the phosphopeptide used as antigen but not by the corresponding dephosphopeptide. The immunolabeling is completely eliminated by λ-phosphatase.
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	ERK1 + ERK2
Species	Rat
Immunogen	KLH-conjugated phosphospecific peptide around Thr202/Tyr204 of Rat ERK1.
Conjugation	Un-conjugated
Alternate Names	MAPK 2; MAPK 1; MAP kinase 2; ERK-2; p41; ERK; MAP kinase 1; PRKM2; PRKM1; EC 2.7.11.24; MAPK2; p40; Extracellular signal-regulated kinase 2; p38; Mitogen-activated protein kinase 2; Mitogen-activated protein kinase 1; ERK2; MAP kinase isoform p42; p42-MAPK; P42MAPK; p41mapk; ERT1

Application Instructions

Application table	Application	Dilution
	ICC/IF	1:200
	IHC-P	1:200
	WB	1:500 - 2000
Application Note	Specific for the ~42k - 44k ERK/MAPK phosphorylated at Thr202 and Tyr204. Immunolabeling is blocked by the phosphopeptide used as antigen but not by the corresponding dephosphopeptide. The immunolabeling is completely eliminated by λ-phosphatase. * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.	

Properties

Form	Liquid
Purification	Affinity Purified
Buffer	PBS (pH 7.4), 150 mM NaCl, 50% Glycerol, and 0.02% Sodium Azide.

Preservative	0.02% Sodium Azide
Stabilizer	50% Glycerol
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

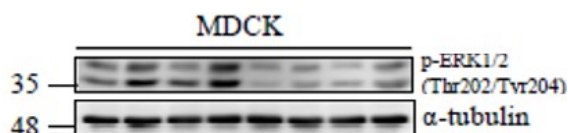
Gene Symbol	MAPK1
Gene Full Name	mitogen activated protein kinase 1
Background	ERK1 is a member of the MAP kinase family. MAP kinases, also known as extracellular signal-regulated kinases (ERKs), act in a signaling cascade that regulates various cellular processes such as proliferation, differentiation, and cell cycle progression in response to a variety of extracellular signals. This kinase is activated by upstream kinases, resulting in its translocation to the nucleus where it phosphorylates nuclear targets. Alternatively spliced transcript variants encoding different protein isoforms have been described. [provided by RefSeq, Jul 2008]
Function	<p>ERK2 is a member of the MAP kinase family. MAP kinases, also known as extracellular signal-regulated kinases (ERKs), act as an integration point for multiple biochemical signals, and are involved in a wide variety of cellular processes such as proliferation, differentiation, transcription regulation and development. The activation of this kinase requires its phosphorylation by upstream kinases. Upon activation, this kinase translocates to the nucleus of the stimulated cells, where it phosphorylates nuclear targets. One study also suggests that this protein acts as a transcriptional repressor independent of its kinase activity. The encoded protein has been identified as a moonlighting protein based on its ability to perform mechanistically distinct functions. Two alternatively spliced transcript variants encoding the same protein, but differing in the UTRs, have been reported for this gene. [provided by RefSeq, Jan 2014]</p> <p>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 plays also 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, 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. [UniProt]</p>
Highlight	<p>Related Antibody Duos and Panels: ARG30264 Phospho ERK1 + ERK2 Antibody Duo (Total, pT202/Y204)</p> <p>Related products: ERK antibodies; ERK Duos / Panels; Anti-Rabbit IgG secondary antibodies;</p> <p>Related news: Understanding Your Cells: Choose the right markers Tools for studying Exosomes More effective cocktail therapy for cancer immune evasion</p> <p>Related poster download: Toll-like Receptor.pdf</p>
Research Area	Cancer antibody; Cell Biology and Cellular Response antibody; Cell Death antibody; Developmental Biology antibody; Gene Regulation antibody; Metabolism antibody; Neuroscience antibody; Signaling Transduction antibody

Calculated Mw
PTM

41 kDa

Phosphorylated upon KIT and FLT3 signaling (By similarity). Dually phosphorylated on Thr-185 and Tyr-187, which activates the enzyme. Undergoes regulatory phosphorylation on additional residues such as Ser-246 and Ser-248 in the kinase insert domain (KID) These phosphorylations, which are probably mediated by more than one kinase, are important for binding of MAPK1/ERK2 to importin-7 (IPO7) and its nuclear translocation. In addition, autophosphorylation of Thr-190 was shown to affect the subcellular localization of MAPK1/ERK2 as well. Ligand-activated ALK induces tyrosine phosphorylation. Dephosphorylated by PTPRJ at Tyr-187. Phosphorylation on Ser-29 by SGK1 results in its activation by enhancing its interaction with MAP2K1/MEK1 and MAP2K2/MEK2. DUSP3 and DUSP6 dephosphorylate specifically MAPK1/ERK2 and MAPK3/ERK1 whereas DUSP9 dephosphorylates a broader range of MAPKs. ISGylated.

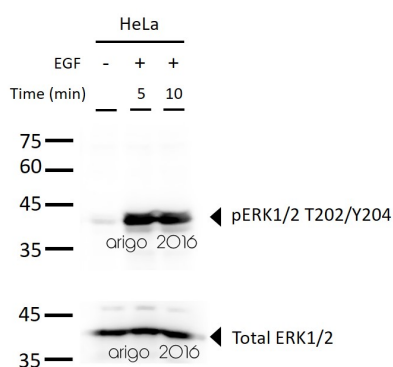
Images



ARG52277 anti-ERK1 + ERK2 phospho (Thr202 / Tyr204) antibody
WB image

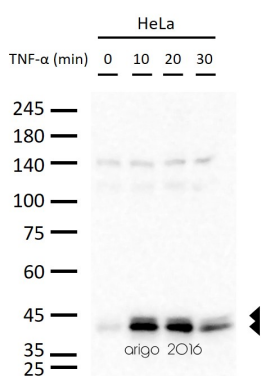
Western blot: Madin-Darby Canine Kidney stained with ARG52277 anti-ERK1 + ERK2 phospho (Thr202 / Tyr204) antibody.

From Heng-Ai Chang et al. Cell Death Discov (2023), [doi: 10.1038/s41420-023-01687-5](https://doi.org/10.1038/s41420-023-01687-5), Fig. S5..



ARG52277 anti-ERK1 + ERK2 phospho (Thr202 / Tyr204) antibody
WB image

Western blot: 30 µg of 1) HeLa, 2) HeLa + EGF 5 min, and 3) HeLa + EGF 10 min stained with [ARG52277](#) anti-ERK1 + ERK2 phospho (Thr202 / Tyr204) antibody (Top) and [ARG55797](#) anti-ERK1 + ERK2 antibody (Bottom) at 1:1000 dilution.



ARG52277 anti-ERK1 + ERK2 phospho (Thr202 / Tyr204) antibody
WB image

Western blot: 30 µg of HeLa cells untreated or treated with TNF-alpha at 20 ng/ml dilution (10, 20, and 30 min). The blots were stained with ARG52277 anti-ERK1 + ERK2 phospho (Thr202 / Tyr204) antibody at 1:1000 dilution.