ARG57105
anti-ERK1 antibody [1A2]

Package: 50 µl
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody [1A2] recognizes ERK1
Tested Reactivity	Hu
Tested Application	ICC/IF, WB
Host	Mouse
Clonality	Monoclonal
Clone	1A2
Isotype	IgG2b, kappa
Target Name	ERK1
Species	Human
Immunogen	Recombinant fragment around aa. 1-137 of Human ERK1
Conjugation	Un-conjugated
Alternate Names	MAPK 3; ERK1; P44MAPK; Microtubule-associated protein 2 kinase; Insulin-stimulated MAP2 kinase; HUMKER1A; PRKM3; P44ERK1; EC 2.7.11.24; p44-MAPK; Extracellular signal-regulated kinase 1; p44-ERK1; HS44KDAP; MAP kinase isoform p44; Mitogen-activated protein kinase 3; ERT2; MAP kinase 3; ERK-1

Application Instructions

Application table

Application	Dilution
ICC/IF	Assay-dependent
WB	1:250 - 1:500

Application Note: * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Properties

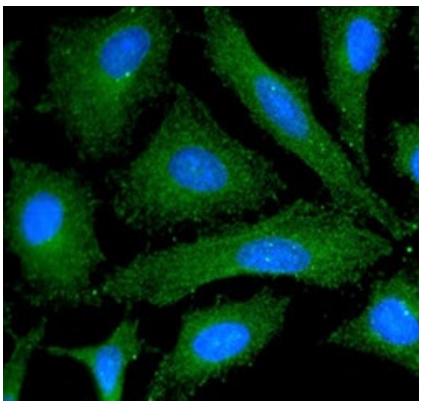
Form	Liquid
Purification	Purification with Protein G.
Buffer	PBS (pH 7.4), 0.02% Sodium azide and 10% Glycerol.
Preservative	0.02% Sodium azide
Stabilizer	10% Glycerol
Concentration	1 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, 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

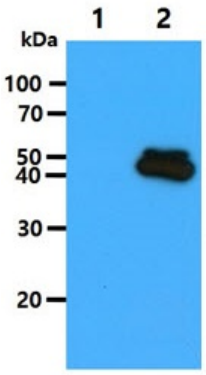
Database links	GeneID: 5595 Human Swiss-port # P27361 Human
Gene Symbol	MAPK3
Gene Full Name	mitogen-activated protein kinase 3
Background	ERK1 is a member of the MAP kinase family. MAP kinases, also known as extracellular signal-regulated kinases (ERKs), act in a signaling cascade that regulates various 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	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]
Calculated Mw	43 kDa
PTM	Phosphorylated upon KIT and FLT3 signaling (By similarity). Dually phosphorylated on Thr-202 and Tyr-204, which activates the enzyme. Ligand-activated ALK induces tyrosine phosphorylation. Dephosphorylated by PTPRJ at Tyr-204.

Images



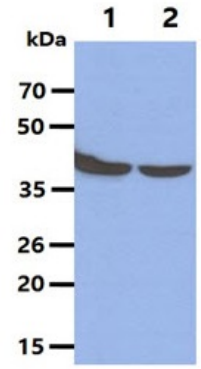
ARG57105 anti-ERK1 antibody [1A2] ICC/IF image

Immunofluorescence: HeLa cells stained with ARG57105 anti-ERK1 antibody [1A2] (green) at 1:100 dilution. DAPI (blue) for nucleus staining.



ARG57105 anti-ERK1 antibody [1A2] WB image

Western blot: 50 ng of 1) MAPK1, and 2) MAPK3 recombinant proteins stained with ARG57105 anti-ERK1 antibody [1A2] at 1:500.



ARG57105 anti-ERK1 antibody [1A2] WB image

Western blot: 40 µg of 1) HepG2, and 2) HeLa cell lysates stained with ARG57105 anti-ERK1 antibody [1A2] at 1:500.