abcam

ab278724

PE Anti-ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) antibody [ERK12T202Y204-A11]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	PE
Excitation/Emission	Ex: 480;565nm, Em: 578nm
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 0.2% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human MAPK3. The exact immunogen used to generate this antibody is proprietary information. Database link P27361
Clone number	ERK12T202Y204-A11
Purification technique	Affinity purification Protein A/G
Light chain type	kappa

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	5 µL for 10^6 Cells
Notes	-

Target data

See full target information MAPK3 pT202 + Y204

Function	Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway (PubMed:34497368). 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:35216969). 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. Phosphorylates GJA1 at 'Ser-279' and 'Ser-282' resulting in an increase in GJA1 ubiquitination and ultimately lysosomal degradation (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	+4°C
Storage information	Store in the dark

Notes

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	ERK1 and ERK2 also known as p44 and p42 MAPK respectively are important proteins in the MAP kinase signaling pathway. They are expressed in various tissues with significant presence in the brain lungs and skin. ERK1 has a molecular weight of approximately 44 kDa while ERK2 has a molecular weight of around 42 kDa. Both proteins become activated through phosphorylation which is essential for their function in cellular processes.
Biological function summary	ERK1 and ERK2 serve as key players in cellular growth differentiation and survival. They form part of a complex cascade where they transduce signals from the cell membrane to the nucleus after activation by phosphorylation. This phosphorylation enables them to modify various downstream targets involved in regulating gene expression and cellular response to external stimuli.
Pathways	ERK1 and ERK2 are critical components of the MAPK/ERK pathway and the Ras-Raf-MEK-ERK signaling cascade. These pathways regulate a multitude of cellular activities including proliferation and differentiation. In the MAPK/ERK pathway proteins like Ras and Raf serve as upstream activators of ERK1 and ERK2. Both ERK1 and ERK2 also interact with other signaling proteins such as MEK1/2 which directly phosphorylates and activates them.
Associated diseases and disorders	Dysregulation of ERK1 and ERK2 is associated with various pathologies including cancer and neurodegenerative diseases. Abnormal activation of these proteins often leads to uncontrolled cell proliferation contributing to oncogenesis. For instance mutations in proteins like Ras which regulate ERK1 and ERK2 can result in continuous activation and lead to tumor formation. Furthermore altered ERK1 and ERK2 signaling is linked to neurodegeneration impacting neuronal survival and function.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

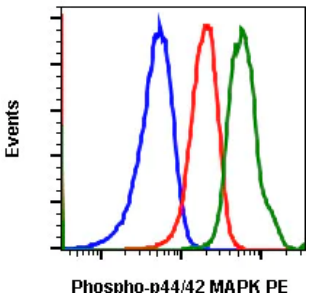
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1 product image



Flow Cytometry - PE Anti-ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) antibody [ERK12T202Y204-A11] (ab278724)

ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) Flow Cytometry staining using rabbit Anti-ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) antibody

Flow cytometric analysis of Jurkat cells, treated with U0126 and unstained as negative control (blue) or treated with U0126 and stained (red) or treated with TPA and stained (green) using ab278724.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.