abcam

ab242418

Anti-ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) antibody [SP327] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	SP327
Purification technique	Affinity purification Protein A/G
Concentration	0.993 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
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	Do Not Freeze

Notes

ab242418 is the carrier-free version of ab223500.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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

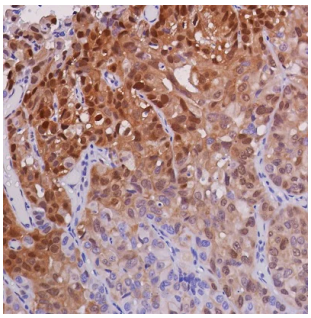
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

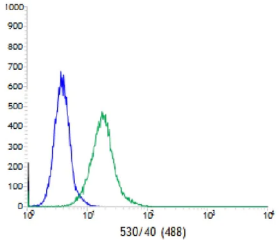
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) antibody [SP327] - BSA and Azide free (ab242418)

ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) antibody

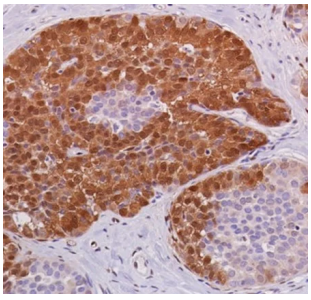
Paraffin-embedded human bladder transitional cell carcinoma tissue stained for ERK1 + ERK2 (phospho T202 + Y204) using ab223500 at 1/100 dilution in immunohistochemical analysis.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, and sodium azide (ab223500).



Flow Cytometry (Intracellular) - Anti-ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) antibody [SP327] - BSA and Azide free (ab242418)

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

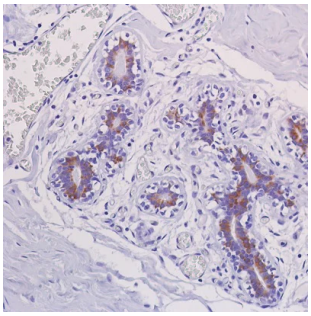
Intracellular flow cytometric analysis of ab223500 in A431 (human epidermoid carcinoma cell line) cells + EGF (green) at 1/100 dilution compared to negative control of rabbit IgG (blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, and sodium azide (ab223500).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) antibody [SP327] - BSA and Azide free (ab242418)

ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ERK1 (phospho T202 + Y204) + ERK2 (phospho T185 + Y187) antibody

Paraffin-embedded human breast ductal carcinoma tissue stained for ERK1 + ERK2 (phospho T202 + Y204) using ab223500 at 1/100 dilution in immunohistochemical analysis.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, and sodium azide (ab223500).



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This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, and sodium azide (ab223500).

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