Erk1/2 Antibody
Mouse Monoclonal Antibody (Mab)
Catalog # AM2189b

Specification

Erk1/2 Antibody - Product Information

<table>
<thead>
<tr>
<th>Application</th>
<th>FC, WB, E</th>
</tr>
</thead>
<tbody>
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<td>Primary Accession</td>
<td>P27361</td>
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<tr>
<td>Other Accession</td>
<td>P28482</td>
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<tr>
<td>Reactivity</td>
<td>Human, Mouse</td>
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<td>Host</td>
<td>Mouse</td>
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<td>Clonality</td>
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<tr>
<td>Isotype</td>
<td>IgG2a</td>
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<tr>
<td>Clone Names</td>
<td>784CT7.6.3</td>
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</table>

Erk1/2 Antibody - Additional Information

Gene ID 5595

Other Names
Mitogen-activated protein kinase 3, MAP kinase 3, MAPK 3, ERT2, Extracellular signal-regulated kinase 1, ERK-1, Insulin-stimulated MAP2 kinase, MAP kinase isoform p44, p44-MAPK, Microtubule-associated protein 2 kinase, p44-ERK1, MAPK3, ERK1, PRKM3

Target/Specificity
Purified His-tagged Erk1/2 protein was used to produce this monoclonal antibody.

Dilution
FC: 1:25
WB: 1:1000

Format
Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Erk1/2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Erk1/2 Antibody - Protein Information

Name MAPK3

Overlay histogram showing Jurkat cells stained with AM2189b (green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then incubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AM2189b, 1:25 dilution) for 60 min at 37°C. The secondary antibody used was Goat-Anti-Mouse IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(OJ192088) at 1/200 dilution for 40 min at 37°C. Isotype control antibody (blue line) was mouse IgG2a (1μg/1x10^6 cells) used under the same conditions. Acquisition of >10,000 events was performed.

All lanes: Anti-Erk1/2 Antibody at 1:4000 dilution
Lane 1: Jurkat whole cell lysates
Lane 7: MCF-7
Synonyms ERK1, PRKM3

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 SP21), cytoskeletal elements (such as CANX, CTTN, GJA1, MAP2, MAPT, PXN, SORBS3 or STMN1), regulators of apoptosis (such as BAD, BID, 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, MKKK1/MKK1, MKKK2/NSK2, 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.

Cellular Location Cytoplasm. Nucleus. Note=Autophosphorylation at Thr-207 promotes nuclear localization

Erk1/2 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot

Western blot analysis of extracts from HCC cell line and 293T cells, using mouse monoclonal antibody Erk1/2 Antibody (Cat. #AM2189b).

Erk1/2 Antibody - Background

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
Immunohistochemistry - Immunofluorescence - Immunoprecipitation - Flow Cytometry - Cell Culture

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.

Erk1/2 Antibody - References

Erk1/2 Antibody - Citations
- **Neuroprotective Effect and Mechanism of Thiazolidinedione on Dopaminergic Neurons In Vivo and In Vitro in Parkinson's Disease.**
- **Integrin α6/Akt/Erk signaling is essential for human breast cancer resistance to radiotherapy.**
- **Sp1-CD147 positive feedback loop promotes the invasion ability of ovarian cancer.**
- **Prostaglandin F2α induces expression of activating transcription factor 3 (ATF3) and activates MAPK signaling in the rat corpus luteum.**