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Product Information

ANTI-MITOGEN ACTIVATED PROTEIN KINASE (MAP Kinase, MAPK, ERK-1 & ERK-2) Developed in Rabbit Delipidized, Whole Antiserum

Product No. **M 5670**

Product Description

Anti-Mitogen Activated Protein Kinase (MAP Kinase, MAPK, ERK-1 & ERK-2) is developed in rabbit using a synthetic peptide (Arg-Arg-Ile-Thr-Val-Glu-Glu-Ala-Leu-Ala-His-Pro-Tyr-Leu-Glu-Gln-Tyr-Tyr-Asp-Pro-Thr-Asp-Glu) derived from subdomain-XI (amino acids 317-339) of human MAP kinase (ERK-1) coupled to KLH as immunogen. This sequence is highly conserved in ERK-1 and ERK-2 isoforms but not in ERK-3 and is identical in human, rat and mouse ERK-1. The peptide is conjugated to KLH with glutaraldehyde. The antiserum has been treated to remove lipoproteins.

Anti-MAP Kinase reacts in immunoblotting (SDS-PAGE) with ERK-1 (44 kDa protein) and ERK-2 (42 kDa protein) using NIH 3T3 mouse fibroblast cell extract and rat brain extract. Staining of the 42 and 44 kDa bands is specifically inhibited with MAP kinase peptide (ERK-1, 317-339), but not with MAP kinase kinase (MEK) peptide corresponding to the N-terminal region of MEK (amino acids 34-48).

MAP kinase (MAPK, mitogen-activated protein kinase), also termed extracellular regulated protein kinase (ERK),^{1,2} consists of a family of protein kinases, which play a crucial role in various signal transduction pathways, leading signals of growth factor and G protein-coupled receptors to their intracellular targets.^{3,4} MAP kinase was shown to regulate several cellular processes including proliferation, differentiation, cellular morphology and oncogenesis^{3,4}. Molecular cloning has established that MAP kinase (ERKs) consists of three different isoforms ERK-1 (p44^{mapk}), ERK-2 (p42^{mapk}) and ERK-3.² Activation of ERK-1 and ERK-2 in mitogen-stimulated cells is directly mediated by MAP kinase kinase (MAPKK or MEK), a dual-specificity protein kinase, that phosphorylates serine/threonine and tyrosine residues in the regulatory sites of MAP kinase.^{5,6} Following activation, MAP kinase phosphorylates several nuclear targets, including transcription factors. In addition, MAP kinase phosphorylates membrane proteins and cytoskeletal proteins.^{3,4} Termination of MAP kinase signalling appears to be mediated by MAP

kinase phosphatase, MKP-1, a dual specificity Thr/Tyr phosphatase which dephosphorylates and inactivates MAP kinase.⁷ MAP kinase isoforms are widely expressed in the central nervous system, thymus, spleen, heart, lung, kidney, and in high levels in PC12 cells and in fibroblasts. Antibodies that react specifically with MAP kinase are useful for the study of the specific activation requirements, differential tissue expression, intracellular localization of MAP kinase in normal and neoplastic tissue.

Reagents

The product is provided as whole antiserum containing 0.1% sodium azide as a preservative.

Precautions

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Product Profile

Protein concentration is determined by Biuret.

A minimum titer of 1:40,000 was determined by indirect immunoblotting using rat brain extract. Staining of 44 kDa and 42 kDa bands was observed. A titer of 1:20,000 was determined by indirect immunoblotting using mouse NIH 3T3 fibroblasts cell extract. Staining of 44 kDa and 42 kDa bands was observed.

In order to obtain best results, it is recommended that each user determine the optimal working dilution for individual applications by titration assay.

Storage

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.*

References

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