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Product Information

Monoclonal Anti-MEKK4

Clone MEKK4-338

Purified Mouse Immunoglobulin

Catalog Number **M 7194**

Product Description

Monoclonal Anti-MEKK4 (mouse IgG2b isotype) is derived from the hybridoma MEKK4-338 produced by the fusion of mouse myeloma cells (NS1 cells) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to amino acids 1081-1095 of human MEKK4, conjugated to KLH. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO-2.

Monoclonal Anti-MEKK4 recognizes human, rat and mouse MEKK4 (~182 kDa). The product is useful in ELISA, immunoblotting and immunocytochemistry.

A variety of extracellular stimuli result in intracellular signals that converge into a limited number of pathways represented by the family of mitogen-activated protein (MAP) kinases. Each MAP kinase is regulated by 3 levels of upstream protein kinases, each level phosphorylating a downstream kinase to activate it. The first level is an activated MAP kinase kinase kinase (MAPKKK) which phosphorylates and activates a specific MAP-kinase kinase (MAPKK), which then activates a specific MAPK.

MEKK4 also called MAP3K4, is the human homolog of the *S. cerevisiae* Ssk2 and Ssk22 MAPKKKs.¹⁻³ The protein has 1607 amino acids with a protein kinase catalytic domain at the C-terminus that is 98, 42, 36 and 41 percent identical to the kinase domains of mouse MEKK4, Ssk2, Ssk22 and *S. pombe* Wik1, respectively. A non-kinase domain that has a regulatory function is located at the N-terminal part of the protein. The protein is expressed mainly in heart, placenta, skeletal muscle and pancreas. Expression of MEKK4 in mammalian cells causes the activation of the CSBP2 and JNK MAPK pathways, but not the ERK pathway. MEKK4-null embryos developed highly penetrant neural tube defects with exencephaly and spina bifida. MEKK4 has a role in regulating MKK4 activity and apoptotic cell death during neural tube development.¹⁻³

Reagent

The product is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~2 mg/ml

Precautions and Disclaimer

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.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A working concentration of 10-20 µg/mL is determined by immunoblotting using total cell extract of HEK293T cells.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Chi, H., et al., *Proc. Nat. Acad. Sci. USA*, **102**, 3846-3851 (2005).
2. Nagase, T., et al., *DNA Res.*, **3**, 321-329 (1996).
3. Takekawa, M., et al., *EMBO J.* **16**, 4973-4982 (1997).

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