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ProductInformation

ANTI-c-Jun N-TERMINAL KINASE (JNK1, JNK 2)
Developed in Rabbit
Delipidized, Whole Antiserum

Product Number **J 4500**

Product Description

Anti-c-Jun N-Terminal Kinase (JNK1, JNK2) is developed in rabbit using a synthetic peptide, corresponding to amino acids (339-354) of human c-Jun N-terminal kinase 1 (JNK1), coupled to KLH as the immunogen. This sequence is highly conserved in JNK1, JNK2 (α, β, γ isoforms), p54 SAPK (α, β, γ) and is identical in human, rat and mouse JNK1. The antiserum has been treated to remove lipoproteins.

Anti-c-Jun N-Terminal Kinase reacts in immunoblotting with JNK1 (46 kDa protein) and JNK2 (55 kDa protein) using a rat brain extract and a NIH 3T3 mouse fibroblasts cell lysate. The product is weakly cross-reactive with the JNK2β (50 kDa) isoform in NIH 3T3 fibroblasts. Staining of the 46 and 55 kDa bands is specifically inhibited with JNK peptide (JNK1, 339-354).

Mitogen-activated protein kinases (MAPKs) are serine/threonine kinases which play a central role in mitogenic signaling.[1,2] The MAPKs function to transduce extracellular signals to intracellular targets, including transcription factors controlling the expression of genes essential to many cellular processes including proliferation, development and differentiation. Several classes of kinases related to MAPKs have been identified. The first group of MAPKs discovered was the p42 and p44 MAPKs (also termed extracellular regulated protein kinase, ERKs), which preferentially transmit signals related to proliferation and differentiation.[3,4] Another group of MAPKs, distantly related to the ERKs, that was primarily linked to the transmission of stress-related signals is the c-Jun N-terminal kinase (JNKs), also known as stress-activated protein kinases (SAPKs).[5,6] JNKs are activated by dual phosphorylation at Thr^{183} and Tyr^{185} in the Thr-Pro-Tyr motif in contrast to the Thr-Glu-Tyr phosphorylation motif of ERKs). JNK is potently activated by inflammatory cytokines, UV-irradiation, osmolarity changes, heat shock, and inhibitors of protein synthesis, which also regulate the activity of the transcription factor c-Jun.[6] The activated JNKs translocate to the nucleus and function to phosphorylate transcription factors such as c-Jun and ATF-2.[7,8,9] JNK phosphorylate c-Jun within its amino-terminal activation domain at Ser^{63} and Ser^{73}. Molecular cloning has established that JNKs consist of several isoforms, JNK1 (46 kDa)[5], JNK2 (55 kDa, p54α SAPK), JNK2β (p54β SAPK) and JNK2γ(p54γSAPK).[6] Activation of JNKs in mitogen-stimulated cells appears to be directly mediated by c-Jun N-terminal kinase kinase (JNKK, SEK1 or MKK4)[10], in a signaling pathway involving PAK, MEKK, JNKK and JNK.[11] JNKs isoforms appear to be widely expressed in many tissues and cells. Antibodies that react specifically with JNKs isoforms are useful for the detection of JNKs and to study the differential tissue expression, intracellular localization of c-Jun kinases in normal and neoplastic tissue.

Reagents

Anti-c-Jun N-Terminal Kinase is provided as a liquid containing 0.1% sodium azide as preservative.

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 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.

Product Profile

1. A dilution of 1:16,000 was determined by indirect immunoblotting using a rat brain extract. Specific staining of JNK (JNK1, 46kDa and JNK2, 55 kDa bands) is obtained.

2. A dilution of 1:2,000 was determined by indirect immunoblotting using a mouse NIH 3T3 fibroblast cell lysate. Specific staining of JNK1 (46 kDa) is obtained and weak staining of JNK2 (55 kDa) is obtained.

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

References

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