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ProductInformation

Anti-phospho-ATF2 [pSer^{490}/pSer^{498}]
Developed in Rabbit, Affinity Isolated Antibody

Product Number **P 1248**

Product Description

Anti-phospho-ATF2 [pSer^{490}/pSer^{498}] was developed in rabbit using a synthetic phosphorylated peptide derived from the region of human ATF2 that is phosphorylated on serines 490 and 498 as immunogen. The final product is generated by sequential chromatography on phospho- and non-phosphopeptide affinity columns.

Anti-phospho-ATF2 [pSer^{490}/pSer^{498}] specifically recognizes ~50 kDa ATF2 phosphorylated at serines 490 and 498. It is used in immunoblotting, dot blot and immunohistochemistry applications.

Activating transcription factor 2 (ATF2), also known as cAMP responsive element binding protein 2 (CREB2; CRE-BP1) mediates diverse transcriptional regulatory effects. All of the CRE-binding proteins have the leucine zipper structure linked to a cluster of basic amino acids in their DNA-binding domain. The transcription factor ATF2 binds to cAMP response elements (CREs) and forms a homodimer or heterodimer with c-Jun that stimulates CRE-dependent transcription. It mediates cyclic AMP induction of cellular genes and activation of viral genes. In response to ultraviolet irradiation, phosphorylation of ATF2 is accompanied by enhanced HAT activity of ATF2 and CRE-dependent transcription. ATF2 may be able to activate transcription by direct effects on chromatin components.[1]

Expression of a 50 amino acid peptide derived from activating transcription factor 2 (ATF2(50-100)) induced apoptosis by sequestering ATF2 to the cytoplasm and inhibiting its transcriptional activities. ATF2(50-100) binds to c-Jun N-terminal kinase (JNK), increasing its activity. Mutation within ATF2(50-100) impairs association with JNK and the inhibition of JNK or c-Jun expression by RNA interference (RNAi) reduces the degree of ATF2(50-100)-induced apoptosis. Inhibition of ATF2 and increased JNK/Jun and JunD activities sensitizes melanoma cells to apoptosis and inhibits their tumorigenicity.[2]

Reagent

The antibody is supplied in 10 mM HEPES, pH 7.5, 150 mM NaCl, 100 µg/ml BSA and 50% glycerol

Storage/Stability

Store at –20 °C. Due to the presence of 50% glycerol the antibody will remain in solution. For extended storage, centrifuge the vial briefly before opening and prepare working aliquots. To ensure accurate dilutions mix gently, remove excess solution from pipette tip with clean absorbent paper, pipette slowly. The antibody is stable for at least 24 months when stored at –20 °C. Defrosted aliquots in use should be stored at 2-8 °C. Avoid repeated freezing and thawing.

Product Profile

Supplied amount is adequate for 10-mini immunoblots.

A recommended working dilution of 1:1000 is determined by immunoblotting using human melanoma cells incubated with varying doses of the radiomimetic drug NCS.

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

References

1. Kawasaki, H. et al., ATF-2 has intrinsic histone acetyltransferase activity which is modulated by phosphorylation. Nature, **405**, 195-200 (2000).
2. Bhoumik, A., et al., Transcriptional switch by activating transcription factor 2-derived peptide sensitizes melanoma cells to apoptosis and inhibits their tumorigenicity, Proc. Natl. Acad. Sci. U S A, **101,** 4222–4227 (2004).

3. Bailey, J. et al., Characterization and functional analysis of cAMP response element modulator protein and activating transcription factor 2 (ATF2) isoforms in the human myometrium during pregnancy and labor: identification of a novel ATF2 species with potent transactivation properties**.** J. Clin. Endocr. Metab**. 87**, 1717-1728 (2002).

4. Gupta, S., et al., Transcription factor ATF2 regulation by the JNK signal transduction pathway, Science, **267,** 389–393 (1995).

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