Product Information

Anti-p300/CBP antibody, Mouse monoclonal

clone NM11, purified from hybridoma cell culture

P2859

Product Description

Monoclonal Anti-p300/CBP (mouse IgG1 isotype) is derived from the NM11 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a native human p300[1,2]. The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2. The antibody is purified from hybridoma cell culture.

Monoclonal Anti-p300/CBP reacts specifically with both p300 and CBP but not with the related p270 molecule[1] The epitope recognized by the antibody resides within the 21 amino acid stretch spanning amino acids 2071- 2091 near the CBP C-terminus[2]. CBP and p300 differ by three non-contiguous residues within this 21 amino acid region, a difference that does not detectably affect the reactivity of the antibody[2]. The antibody may be used for immunoblotting (300 kDa),[1,2] immunoprecipitation[1,2], and immunocytochemistry. Reactivity has been observed with human[1,2], monkey, mink, rat and mouse p300/CBP.

Before any gene is translated to a protein, it must first be transcribed in the nucleus into messenger RNA (mRNA), which stores a complementary copy of the DNA code. The initial event in this process is the binding of specific proteins to the gene's enhancer and promoter sequences. Interaction of sequence-specific DNA-binding proteins with one or more regulatory elements controls the rate of transcriptional initiation from eukaryoyic polymerase II promoters. These elements can be bound by a number of related proteins, thereby extending the repertoire of signals influencing the regulation of gene expression through individual regulatory sequences. Whereas some DNA-binding proteins are "positive regulators" that stimulate transcription, others are "negative regulators" that block transcription. The major regulators of the c-*jun* promoter are members of the ATF/CREB family of leucine zipper proteins[3,4]. The ATF/CREB family consists of a series of transcription factors that function through binding to the cAMP responsive element (CRE) palindromic octanucleotide TGACCTCA. CREB-binding protein (CBP) and p300 are large (300 kDa), closely related nuclear phosphoproteins (a 63% identity in human), which are conserved among a variety of mammalian species[5]. p300/CBP are capable of binding to a variety of transcriptional activator and regulatory molecules, including p53 and nuclear hormone receptors[5,7]. The complexity of these p300/CBP cellular associations suggests that both proteins play a central role in the coordination of gene expression during cell growth and differentiation[8]. It seems that p300 and CBP function, at least in part, by promoting interactions between upstream regulatory proteins and the basal transcription apparatus[9]. Indeed, the C-terminus of both p300 and CBP bind the adenovirus early region 1A (E1A), and are implicated in gene product-mediated immortalization of primary cell cultures, repression of tissue-specific gene expression, and subversion of cellular differentiation pathways.[10,11] p300/CBP also bind to other molecules, including DNA, and components of the TATA binding protein complexes (TBP).[12] They are also capable of modifying chromatin through intrinsic and associated histone acetyl transferase activities[6].

Monoclonal antibodies reacting specifically with p300 and CBP are useful tools to study molecular mechanisms associated with the control of transcription in intracellular pathways and their essential roles during developmental and pathological processes.

Reagents

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4 containing 15 mM sodium azide.
Antibody Concentration: ~2 mg/mL

Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards 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 at -20 °C. 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

Immunoblotting: a working concentration of 10-20 mg/mL is determined using whole extract of 293 human embryonal kidney cells.

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

References

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P2859 dat Rev 04/22