Product Information

Anti-MeCP2 Antibody, Mouse Monoclonal

Clone Men-8, purified from hybridoma cell culture

M7443

Product Description

Monoclonal Anti-MeCP2 (mouse IgG1 isotype) is derived from the Men-8 hybridoma produced by the fusion of mouse myeloma cells (NS1) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to the N-terminus (amino acids 15-30) of human MeCP2. The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, M7443 ISO2.

Monoclonal Anti-MeCP2 recognizes human, monkey, rat, and mouse MeCP2, ~75 kDa. The antibody may be used in immunoblotting and immunocytochemistry.

Chromatin, the physiological packaging structure of histone proteins and DNA, is a key element in the regulation of gene expression. Histones are subjected to post-translational modifications such as acetylation, phosphorylation, and methylation and play a major role in the regulation of transcription.[1, 2] DNA methylation is the major modification of eukaryotic genomes, which occurs at the fifth position of cytosine in CpG dinucleotide sequences.[3] DNA methylation is associated with transcriptional repression.[4, 5] Silencing of transcription units has been found to occur in genes located on the inactive X-chromosome, in genes silenced by genomic imprinting, and in genes silenced in transformed cell lines and tumors.[3, 6] The DNA methylation system is composed of methyl-CpG-binding proteins as well as of DNA cytosine methyl transferases.[3, 7]

MeCP2 was the first methyl-CpG-binding protein to be isolated.[8] This protein contains a methyl-CpG-binding domain (MBD) and a transcriptional repression domain (TRD).[8] MeCP2 is capable of binding to a single symmetrically methylated CpG pair and was found to bind to chromosomes at sites known to contain methylated DNA.[9] MeCP2 silences transcription by recruiting the histone deacetylase (HDAC) repressive machinery via recruitment of the Sin 3A corepressor, thus removing acetyl groups from histones and consequently, silencing genes.[10]

Interestingly, mutations in MeCP2 are found in 65-77% of Rett syndrome patients, an X-linked dominant disorder that results in serious developmental defects.[11] Antibodies reacting specifically with MeCP2 may be used for studying chromatin remodeling effects on gene expression.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody concentration: ~1 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 prolonged 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

Immunoblotting: a working concentration of 1-2 µg/mL is recommended using a nuclear cell extract of cultured human acute T cell leukemia Jurkat cells or MCF7 cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

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