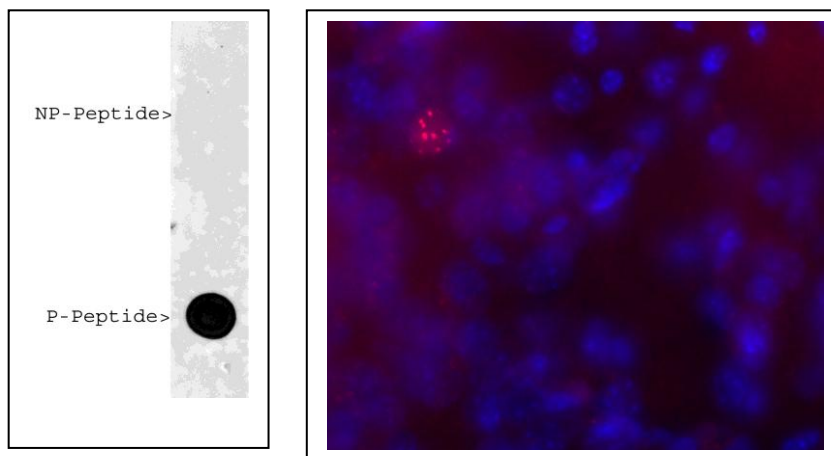


Catalogue# MCA-2E2: Mouse Monoclonal Antibody to Phospho-MeCP2 (S421)

The Immunogen: Methyl-CpG Binding Protein 2 (MeCP2) is a nuclear protein that is found to bind to symmetrical methylated CpG dinucleotide sequences. It is a transcriptional modulator that can alter gene expression epigenetically via binding to methylated DNA. It is involved not only in transcriptional silencing, but also in transcriptional activation, chromatin remodeling, and RNA splicing. Mecp2 is a X-chromosome-linked gene, highly expressed in neurons. The mutations of Mecp2 are linked to Rett syndrome (RTT) (2), which is a neurodevelopmental, autistic disorder that affects mainly females. Studies show that even the loss of a specific phosphorylation site of MeCP2 (e.g., S80, S421, and S424) disturbs normal maturation of the mammalian brain. Neuronal activity has been reported to trigger phosphorylation of MeCP2 at S421 *in vitro* and *in vivo*, which was further postulated to regulate activity-dependent gene transcription and neuronal spine maturation (3) (4). Mutation of the S80 phosphorylation site reduces MeCP2 association with chromatin at several euchromatic gene promoters, alters transcription of several genes that are potentially important for neuronal function (5). The [HGNC](#) name for this protein is [MECP2](#).



Figures: Left: Dot blot analysis of MCA-2E2, monoclonal antibody anti-Phospho-MeCP2(S421) on nitrocellulose membrane. 0.5µg of Phospho-peptide or Non Phospho-peptide was loaded on the membrane. This antibody recognizes Phospho-peptide (S421) only. **Right:** Mouse brain section, which was cut at 45µm on a vibratome after perfusion with 4% paraformaldehyde and overnight fixation, was stained with monoclonal antibody MCA-2E2 at 1: 1,000. Phospho-MeCP2 at S421 was mainly associated with methylated DNA in nucleus of activated neuron cells (red). Blue shows DAPI staining of nuclear DNA.

Antibody characteristics: Antibody is generated from mouse immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding S421 of human MeCP2. This antibody is mouse IgG1 class antibody and supplied as an aliquot of purified preparation at 1 mg/mL in 50% glycerol /PBS with 5 mM sodium azide as a preservative (Link to <http://www.encorbio.com/MSDS/azide.htm> for Material Safety Data Sheet).

Suggestions for use: Try at dilutions of 1:1,000 for immunofluorescence.

Omim link: <http://omim.org/entry/300005>

References:

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Limitations: This product is for research use only and is not approved for use in humans or in clinical diagnosis.

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