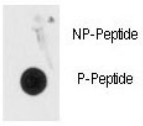
Phospho-MECP2 S80 Antibody / MeCP2 pSer80 Rabbit Polyclonal Antibody (F48587)

Catalog No.	Formulation	Size
F48587-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F48587-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

Species Reactivity	Human
Predicted Reactivity	Mouse, Primate, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity
UniProt	P51608
Applications	Dot blot: 1:500
Limitations	This Phospho-MECP2 S80 Antibody / MeCP2 pSer80 Rabbit Polyclonal Antibody is available for research use only.



Phospho-MECP2 S80 Antibody Dot Blot Analysis of Phosphorylated and Nonphosphorylated MECP2 Peptides. Dot blot analysis using MeCP2 pSer80 Rabbit Polyclonal Antibody to compare recognition of phosphorylated (P-peptide) and nonphosphorylated (NP-peptide) MECP2 peptides. A total of 50 ng of each peptide was spotted onto the membrane. A distinct immunoreactive signal is detected with the phosphorylated peptide, while little to no signal is observed with the corresponding nonphosphorylated peptide, supporting phosphorylation-dependent recognition of the MECP2 Ser80 epitope.

Description

Phospho-MECP2 S80 Antibody / MeCP2 pSer80 Rabbit Polyclonal Antibody targets methyl-CpG-binding protein 2 (MECP2) phosphorylated at serine 80. MECP2 is a nuclear chromatin-associated protein involved in DNA methylation-dependent gene regulation, chromatin organization, and neuronal development. Its methyl-CpG-binding domain recognizes methylated DNA, while additional regions mediate interactions with transcriptional regulatory proteins, including the NCoR/SMRT corepressor complex. MECP2 is particularly abundant in mature neurons, where it contributes

to the maintenance of neuronal function, synaptic development, and transcriptional responses to cellular signaling.

Phosphorylation at Ser80 is an important regulatory modification that influences MECP2 interactions with chromatin. Unlike phosphorylation at Ser423, which increases following neuronal stimulation, Ser80 phosphorylation is prominent under resting neuronal conditions. Neuronal depolarization and calcium influx promote dephosphorylation at Ser80, demonstrating that these two regulatory sites respond differently to neuronal activity. This opposing phosphorylation pattern has been proposed to help coordinate changes in MECP2 function as neurons transition between resting and activated states.

Experimental studies have demonstrated that substitution of Ser80 with alanine reduces MECP2 association with selected gene promoters in resting neurons. These changes have been associated with altered transcription of genes involved in neuronal signaling and synaptic function, including RAB3D, VAMP3, and IGSF4B. However, Ser80 phosphorylation does not appear to control global transcription uniformly, suggesting that its regulatory effects depend on specific chromatin regions and cellular conditions. Studies using genetically modified mice have also linked disruption of Ser80 phosphorylation to altered locomotor activity, supporting a physiological role for this modification in neuronal function.

MECP2 mutations are strongly associated with Rett syndrome and related neurodevelopmental disorders, highlighting the importance of its normal regulatory activity. Understanding phosphorylation-dependent MECP2 regulation may help clarify how neuronal signaling influences chromatin interactions, transcriptional responses, and neurological development. Phospho-MECP2 S80 Antibody is intended for investigating this specific phosphorylation event and its relationship to neuronal activity, epigenetic regulation, and the molecular mechanisms governing MECP2 function.

For an alternative antibody targeting this chromatin-associated protein, see our MECP2 Antibody (FY13265), validated for western blot, immunohistochemistry, and immunofluorescence across multiple species.

Application Notes

Titration of the Phospho-MECP2 S80 Antibody / MeCP2 pSer80 Rabbit Polyclonal Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

This phospho-MeCP2 antibody was produced from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding pS80 of human MeCP2.

Storage

Aliquot the phospho-MeCP2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Phospho-MECP2 Ser80 antibody, Phospho-MeCP2 S80 antibody, Phosphorylated MeCP2 Ser80 antibody, MECP2 phospho-Ser80 antibody, Methyl-CpG-binding protein 2 phospho-S80 antibody, Phospho-methyl-CpG-binding protein 2 antibody, MeCP2 pSer80 antibody, MECP2 Ser80 phosphorylation antibody

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