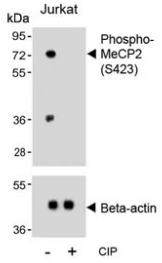
Phospho-MECP2 S423 Antibody / MeCP2 pSer423 Rabbit Polyclonal Antibody (F54806)

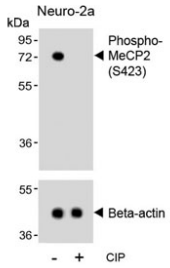
Catalog No.	Formulation	Size
F54806-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F54806-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

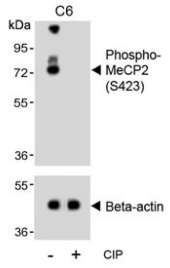
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
UniProt	P51608
RRID	AB_3758649
Applications	Immunohistochemistry (FFPE): 1:50-1:100 Western blot: 1:500
Limitations	This Phospho-MECP2 S423 Antibody / MeCP2 pSer423 Rabbit Polyclonal Antibody is available for research use only.



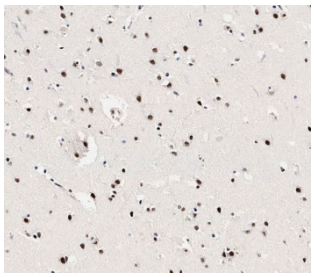
Phospho-MECP2 S423 Antibody Western Blot Analysis of Jurkat Cells With and Without Phosphatase Treatment. Western blot analysis of human Jurkat cell lysate using MeCP2 pSer423 Rabbit Polyclonal Antibody. An immunoreactive band is detected at approximately 75 kDa in untreated lysate (-CIP), while the corresponding signal is absent following calf intestinal alkaline phosphatase treatment (+CIP), supporting phosphorylation-dependent antibody recognition. The observed migration is consistent with the commonly reported apparent molecular weight of full-length MECP2. Beta-actin serves as the loading control.



Phospho-MECP2 S423 Antibody Western Blot Analysis of Neuro-2a Cells With and Without Phosphatase Treatment. Western blot analysis of mouse Neuro-2a cell lysate using MeCP2 pSer423 Rabbit Polyclonal Antibody. An immunoreactive band at approximately 75 kDa is detected in untreated lysate (-CIP) but is absent following calf intestinal alkaline phosphatase treatment (+CIP), supporting recognition of phosphorylated MeCP2. The corresponding phosphorylation site is commonly designated Ser421 in mouse MeCP2. Beta-actin serves as the loading control.



Phospho-MECP2 S423 Antibody Western Blot Analysis of Rat C6 Cells With and Without Phosphatase Treatment. Western blot analysis of rat C6 cell lysate using MeCP2 pSer423 Rabbit Polyclonal Antibody. Immunoreactive bands are observed in the approximately 70-95 kDa region of untreated lysate (-CIP), while the corresponding signals are absent following calf intestinal alkaline phosphatase treatment (+CIP). This phosphatase-sensitive pattern supports recognition of phosphorylated protein species, although the identities of the individual bands have not been independently established. Beta-actin serves as the loading control.



Phospho-MECP2 S423 Antibody IHC Staining of Human Brain Tissue. Immunohistochemical analysis of FFPE human brain tissue using MeCP2 pSer423 Rabbit Polyclonal Antibody. Brown DAB immunoreactivity is observed in scattered cells, with staining predominantly associated with nuclear regions, consistent with the chromatin-associated localization of MECP2. Heat-induced epitope retrieval was performed by steaming tissue sections in EDTA buffer at pH 9 for 20 minutes, followed by cooling before staining.

Description

Phospho-MECP2 S423 Antibody / MeCP2 pSer423 Rabbit Polyclonal Antibody targets methyl-CpG-binding protein 2 (MECP2) phosphorylated at serine 423. MECP2 is a nuclear protein that participates in chromatin organization, transcriptional regulation, and neuronal development. Its methyl-CpG-binding domain recognizes methylated DNA, while other regions mediate interactions with transcriptional regulatory complexes, including the NCoR/SMRT corepressor complex. MECP2 is especially abundant in mature neurons, where it contributes to the regulation of neuronal gene expression, synaptic development, and activity-dependent responses.

MECP2 undergoes multiple post-translational modifications that influence its regulatory functions. Phosphorylation at human Ser423 corresponds to the extensively studied Ser421 site in a commonly referenced mouse MeCP2 isoform. This phosphorylation event has been associated with neuronal depolarization and calcium-dependent signaling. Studies of activity-dependent MeCP2 phosphorylation have implicated calcium/calmodulin-dependent protein kinases in the regulation of this site. Other characterized phosphorylation sites, including Ser80 and Thr308, contribute to distinct aspects of MECP2 regulation, illustrating how different signaling pathways can modify its interactions with chromatin and associated regulatory proteins.

Activity-dependent phosphorylation of MECP2 has been investigated in relation to brain-derived neurotrophic factor (BDNF) expression, dendritic development, and synaptic plasticity. Experimental studies suggest that phosphorylation at the corresponding mouse Ser421 site contributes to neuronal responses following stimulation, although its functional consequences depend on the experimental context. MECP2 also participates in broader epigenetic regulatory mechanisms involving DNA methylation, chromatin accessibility, and transcriptional control. Phosphorylation provides an additional regulatory layer through which intracellular signaling may influence these processes without necessarily changing total MECP2 abundance.

Mutations affecting MECP2 are strongly associated with Rett syndrome and related neurodevelopmental disorders.

Research into MECP2 phosphorylation may help clarify how neuronal signaling intersects with chromatin regulation and how disruption of these mechanisms contributes to neurological dysfunction. Phospho-MECP2 S423 Antibody is intended for investigating phosphorylation-dependent MECP2 regulation, particularly the relationship between neuronal activity, calcium signaling, and nuclear transcriptional responses.

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

The stated application concentrations are suggested starting points. Titration of the Phospho-MECP2 S423 Antibody / MeCP2 pSer423 Rabbit Polyclonal Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A synthetic peptide corresponding the amino acids surrounding phosphorylated S423 was used as the immunogen for the Phospho-MECP2 S423 Antibody.

Storage

Aliquot the Phospho-MECP2 S423 Antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Phospho-MECP2 Ser423 antibody, Phospho-MeCP2 S423 antibody, Phosphorylated MeCP2 Ser423 antibody, MECP2 phospho-Ser423 antibody, Methyl-CpG-binding protein 2 phospho-S423 antibody, Phospho-methyl-CpG-binding protein 2 antibody, MeCP2 pSer423 antibody, MECP2 Ser423 phosphorylation antibody

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