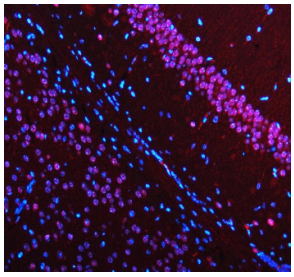
MECP2 Antibody / Methyl-CpG-binding protein 2 Polyclonal Antibody (FY13265)

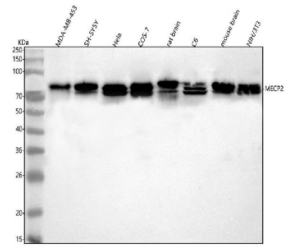
Catalog No.	Formulation	Size
FY13265	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

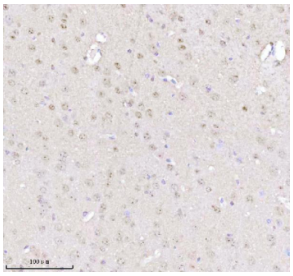
Species Reactivity	Human, Monkey, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P51608
Localization	Nuclear
Applications	Western Blot: 0.25-0.5ug/ml Immunohistochemistry: 2-5ug/ml Immunofluorescence: 5ug/ml ELISA: 0.1-0.5ug/ml
Limitations	This MECP2 Antibody / Methyl-CpG-binding protein 2 Polyclonal Antibody is available for research use only.



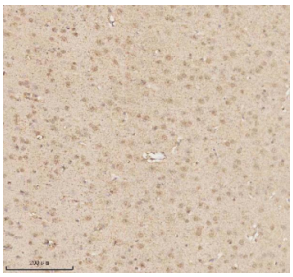
MECP2 Antibody Immunofluorescence Staining of Mouse Brain Tissue. Immunofluorescence analysis of FFPE mouse brain tissue using Methyl-CpG-binding protein 2 Polyclonal Antibody at 5 ug/ml. MECP2-associated fluorescence is shown in red using a Cy3-conjugated secondary antibody, while DAPI counterstaining identifies nuclei in blue. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.



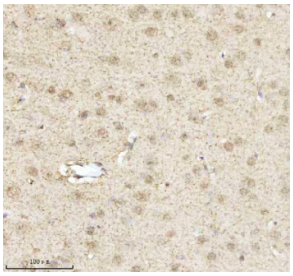
MECP2 Antibody Western Blot Analysis of Human, Monkey, Rat and Mouse Lysates. Western blot analysis of human MDA-MB-453 (lane 1), SH-SY5Y (lane 2), HeLa (lane 3), monkey COS-7 (lane 4), rat brain (lane 5), rat C6 (lane 6), mouse brain (lane 7), and mouse NIH/3T3 (lane 8) lysates using Methyl-CpG-binding protein 2 Polyclonal Antibody at 0.5 ug/ml. Immunoreactive bands are detected at approximately 70-75 kDa, compared with the calculated MECP2 molecular weight of approximately 52 kDa. This migration is consistent with the well-documented anomalous electrophoretic behavior of full-length MECP2, which is commonly observed near 75 kDa.



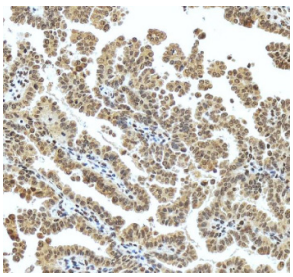
MECP2 Antibody IHC Staining of Mouse Brain Tissue. Immunohistochemical analysis of FFPE mouse brain tissue using Methyl-CpG-binding protein 2 Polyclonal Antibody at 2 ug/ml. Brown DAB immunoreactivity is detected in the tissue, consistent with the predominantly nuclear localization of MECP2 in neuronal populations. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.



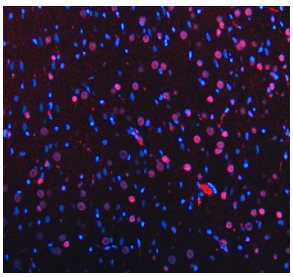
MECP2 Antibody IHC Staining of Rat Brain Tissue. Immunohistochemical analysis of FFPE rat brain tissue using Methyl-CpG-binding protein 2 Polyclonal Antibody at 2 ug/ml. Brown DAB staining demonstrates MECP2-associated immunoreactivity within brain tissue, where the protein is primarily associated with neuronal nuclei. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.



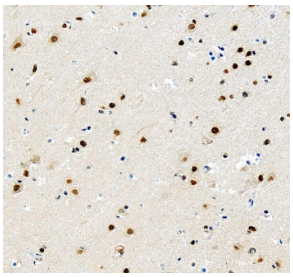
MECP2 Antibody IHC Staining of an Additional Rat Brain Section. Immunohistochemical analysis of FFPE rat brain tissue using Methyl-CpG-binding protein 2 Polyclonal Antibody at 2 ug/ml. Brown DAB staining demonstrates the distribution of MECP2-associated immunoreactivity in the examined brain section. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.



MECP2 Antibody IHC Staining of Human Ovarian Cancer Tissue. Immunohistochemical analysis of FFPE human ovarian cancer tissue using Methyl-CpG-binding protein 2 Polyclonal Antibody at 2 ug/ml. Brown DAB staining demonstrates MECP2-associated immunoreactivity in the examined tumor tissue. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.



MECP2 Antibody Immunofluorescence Staining of Rat Brain Tissue. Immunofluorescence analysis of FFPE rat brain tissue using Methyl-CpG-binding protein 2 Polyclonal Antibody at 5 ug/ml. MECP2-associated fluorescence is shown in red using a Cy3-conjugated secondary antibody, with DAPI nuclear counterstaining in blue. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.



MECP2 Antibody IHC Staining of Human Brain Tissue. Immunohistochemical analysis of FFPE human brain tissue using Methyl-CpG-binding protein 2 Polyclonal Antibody at 2 ug/ml. Brown DAB staining demonstrates MECP2-associated immunoreactivity in the examined tissue, consistent with the established nuclear localization of this chromatin-associated protein. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.

Description

MECP2 antibody detects Methyl-CpG-binding protein 2, a nuclear chromatin-associated protein that binds methylated DNA and regulates gene expression. The UniProt recommended name is Methyl-CpG-binding protein 2 (MECP2). This transcriptional regulator modulates chromatin compaction and transcriptional repression through its interactions with methylated CpG sites and chromatin remodeling complexes.

Functionally, MECP2 antibody identifies a 486-amino-acid protein composed of a methyl-CpG-binding domain (MBD) and a transcriptional repression domain (TRD). MECP2 binds selectively to methylated DNA sequences and recruits co-repressors such as SIN3A and histone deacetylases (HDACs), leading to histone deacetylation and chromatin condensation. It also regulates non-coding RNA transcription, alternative splicing, and higher-order chromatin organization. MECP2 plays a critical role in neuronal maturation, synaptic development, and activity-dependent gene regulation.

The MECP2 gene is located on chromosome Xq28 and is expressed ubiquitously, but at especially high levels in neurons. Expression is dynamically regulated during postnatal brain development, paralleling synaptogenesis. In neurons, MECP2 controls transcriptional homeostasis by balancing activation and repression of large gene networks essential for synaptic plasticity and neuronal connectivity.

Pathologically, mutations in MECP2 cause Rett syndrome, a severe neurodevelopmental disorder characterized by regression of motor and cognitive abilities in early childhood. Different mutation types (missense, nonsense, deletions) disrupt DNA binding or repressor recruitment, leading to widespread transcriptional dysregulation. Altered MECP2 expression is also implicated in autism spectrum disorder and certain cancers. Research using MECP2 antibody supports studies in epigenetic regulation, neurodevelopment, and chromatin biology.

MECP2 antibody is validated for western blotting, immunofluorescence, and chromatin immunoprecipitation to detect methyl-DNA-binding proteins. NSJ Bioreagents provides MECP2 antibody reagents optimized for studies in transcriptional repression, synaptic regulation, and neuroepigenetics.

Structurally, Methyl-CpG-binding protein 2 contains an MBD that recognizes methylated CpG dinucleotides, a TRD that interacts with SIN3A-HDAC complexes, and a C-terminal domain that binds nucleosomes. This structural modularity allows MECP2 to act as a chromatin architectural protein coordinating DNA methylation and transcriptional silencing. This antibody enables detailed analysis of MECP2's role in gene regulation and neurological disease mechanisms.

MECP2 plays a critical role in neuronal development, synaptic function, and the regulation of gene expression, making it an important target in neuroscience research.

Application Notes

Optimal dilution of the MECP2 Antibody / Methyl-CpG-binding protein 2 Polyclonal Antibody should be determined by the researcher.

Immunogen

E.coli-derived human MECP2 recombinant protein (Position: K36-Q437) was used as the immunogen for the MECP2

antibody.

Storage

After reconstitution, the MECP2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Methyl-CpG-binding protein 2 antibody, Methyl CpG binding protein 2 antibody, Methylated DNA-binding protein MeCP2 antibody, Methyl-CpG-binding protein 2 polyclonal antibody, MeCP2 protein antibody, Methylated CpG binding protein 2 antibody, Rett syndrome-associated protein antibody

Copyright © NSJ Bioreagents. All rights reserved.