

Methyl-CpG-binding protein 2 Antibody / MECP2 (FY13459)

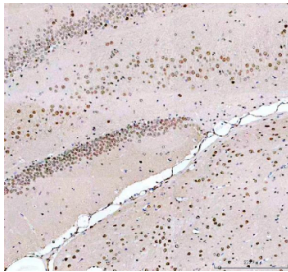
Catalog No.	Formulation	Size
FY13459	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

[Bulk quote request](#)

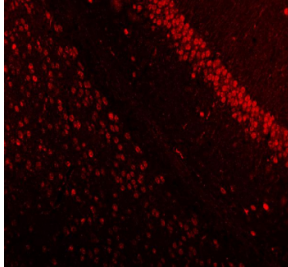
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na ₂ HPO ₄ .
UniProt	P51608
Localization	Nuclear
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml Immunofluorescence : 5ug/ml ELISA : 0.1-0.5ug/ml Flow Cytometry : 1-3ug/million cells
Limitations	This Methyl-CpG-binding protein 2 antibody is available for research use only.



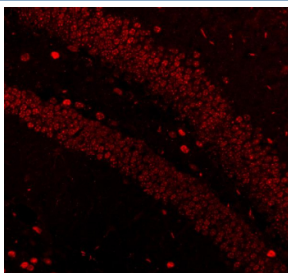
Immunohistochemistry analysis of MECP2 using Methyl-CpG-binding protein 2 antibody. MECP2 expression was examined in mouse brain tissue, with prominent nuclear staining observed in neuronal cells throughout the cortex. Heat-mediated antigen retrieval was performed using EDTA buffer (pH 8.0). Tissue sections were blocked with normal goat serum and incubated with MECP2 antibody overnight at 4°C. Immunoreactivity was visualized using an HRP-based detection system with DAB chromogen, followed by hematoxylin counterstaining.



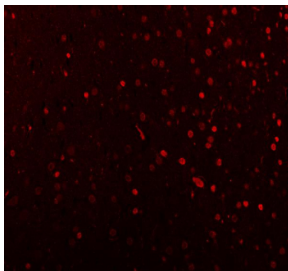
Immunohistochemistry analysis of MECP2 using Methyl-CpG-binding protein 2 antibody. MECP2 expression was examined in rat brain tissue, showing nuclear localization in neuronal cell populations. Heat-mediated antigen retrieval was performed using EDTA buffer (pH 8.0). Tissue sections were blocked with normal goat serum and incubated with MECP2 antibody overnight at 4°C. Immunoreactivity was visualized using an HRP-based detection system with DAB chromogen, followed by hematoxylin counterstaining.



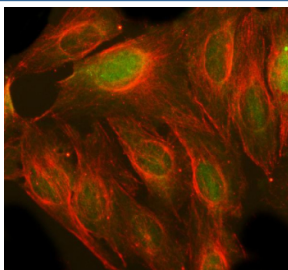
Immunofluorescence analysis of MECP2 using Methyl-CpG-binding protein 2 antibody. MECP2 expression was examined in mouse brain tissue, with strong nuclear fluorescence observed in neuronal cells. Heat-mediated antigen retrieval was performed using EDTA buffer (pH 8.0). Tissue sections were blocked with normal goat serum and incubated with MECP2 antibody (red) overnight at 4°C. Immunoreactivity was visualized using fluorescence detection.



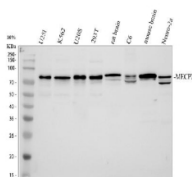
Immunofluorescence analysis of MECP2 using Methyl-CpG-binding protein 2 antibody. MECP2 expression was examined in mouse brain tissue, with strong nuclear fluorescence observed in neuronal cells. Heat-mediated antigen retrieval was performed using EDTA buffer (pH 8.0). Tissue sections were blocked with normal goat serum and incubated with MECP2 antibody (red) overnight at 4°C. Immunoreactivity was visualized using fluorescence detection.



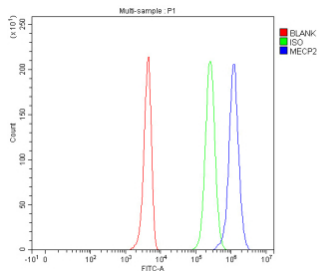
Immunofluorescence analysis of MECP2 using Methyl-CpG-binding protein 2 antibody. MECP2 expression was examined in rat brain tissue, showing nuclear localization within neuronal populations. Heat-mediated antigen retrieval was performed using EDTA buffer (pH 8.0). Tissue sections were blocked with normal goat serum and incubated with MECP2 antibody (red) overnight at 4°C. Immunoreactivity was visualized using fluorescence detection.



Immunofluorescence analysis of MECP2 using Methyl-CpG-binding protein 2 antibody and alpha tubulin antibody. MECP2 expression was examined in human U2OS cells, with MECP2 signal observed in the nucleus and alpha tubulin outlining the cytoplasmic microtubule network. Cells were blocked with normal goat serum and incubated with MECP2 antibody (green) and alpha tubulin antibody (red) overnight at 4°C. Immunoreactivity was visualized using fluorescence detection.



Western blot analysis of MECP2 using Methyl-CpG-binding protein 2 antibody. MECP2 expression was examined in human U251 (lane 1), K562 (lane 2), U2OS (lane 3), and HEK293T (lane 4) whole cell lysates, as well as rat brain tissue (lane 5), rat C6 cells (lane 6), mouse brain tissue (lane 7), and mouse Neuro-2a cells (lane 8). A predominant band is detected at approximately 75 kDa, migrating above the predicted molecular weight of approximately 52 kDa based on the MECP2 amino acid sequence. This upward shift is consistent with the well-documented anomalous SDS-PAGE migration of MECP2, which is attributed to its high content of intrinsically disordered regions, basic residues, and extensive post-translational modifications such as phosphorylation, all of which are known to increase the apparent molecular weight of chromatin-associated proteins.



Flow cytometry analysis of MECP2 using Methyl-CpG-binding protein 2 antibody. MECP2 expression was examined in human HEK293T cells following fixation with 4% paraformaldehyde and permeabilization to enable intracellular staining. Cells were incubated with MECP2 antibody and detected using a fluorescent secondary antibody (blue). An isotype control stained under identical conditions is shown in green, and an unstained control is shown in red. The rightward fluorescence shift observed with MECP2 antibody staining indicates specific intracellular detection of MECP2.

Description

Methyl-CpG-binding protein 2 antibody targets Methyl-CpG-binding protein 2, encoded by the MECP2 gene. Methyl-CpG-binding protein 2 is a nuclear chromatin-associated protein that binds methylated CpG dinucleotides and functions as a regulator of gene expression. MECP2 plays a central role in interpreting DNA methylation marks and linking epigenetic modifications to transcriptional control.

Functionally, Methyl-CpG-binding protein 2 acts primarily as a transcriptional regulator by recruiting corepressor complexes and chromatin-modifying enzymes to methylated DNA regions. Through these interactions, MECP2 influences chromatin structure and gene accessibility, contributing to long-term regulation of gene expression rather than rapid transcriptional switching. A MECP2 antibody supports studies focused on epigenetic regulation, chromatin biology, and transcriptional repression mechanisms.

MECP2 expression is particularly prominent in neuronal cells, where it is required for normal brain development and synaptic function. Subcellular localization is predominantly nuclear, consistent with its role in chromatin binding, although distribution within the nucleus can vary depending on chromatin state and developmental context. MECP2 abundance and activity are tightly regulated, reflecting its importance in maintaining transcriptional homeostasis.

From a disease-relevance perspective, mutations or altered regulation of MECP2 are strongly associated with neurodevelopmental disorders, most notably Rett syndrome. Dysregulation of MECP2-dependent gene expression programs can disrupt neuronal maturation and function, highlighting the protein's critical role in nervous system development and maintenance. MECP2 has also been investigated in broader contexts of epigenetic dysfunction and transcriptional misregulation.

At the molecular level, Methyl-CpG-binding protein 2 contains a methyl-CpG-binding domain responsible for recognizing methylated DNA, along with transcriptional repression domains that mediate protein-protein interactions. Isoform variation and post-translational regulation can influence MECP2 behavior in experimental systems without altering its core DNA-binding function. MECP2 antibody reagents support research applications focused on epigenetic control and nuclear gene regulation, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the Methyl-CpG-binding protein 2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human MECP2 recombinant protein (Position: K119-R453) was used as the immunogen for Methyl-CpG-binding protein 2 antibody.

Storage

After reconstitution, the Methyl-CpG-binding protein 2 antibody can be stored for up to one month at 4°C. For long-term, aliquot and store at -20°C. Avoid repeated freezing and thawing.

