

**#3456** Store at -20°C

# MeCP2 (D4F3) XP™ Rabbit mAb



100 µl  
 (10 western blots)

**Orders** ■ 877-616-CELL (2355)  
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**Support** ■ 877-678-TECH (8324)  
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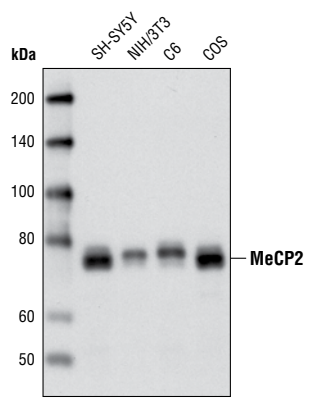
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IHC-P, IF-IC Endogenous	H, M, R, Mk	75 kDa	Rabbit IgG**

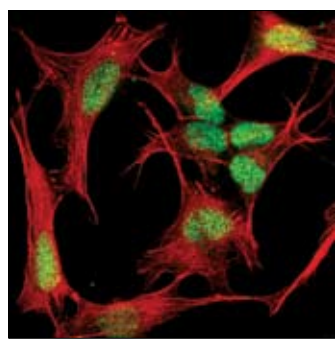
**Background:** Methyl-CpG-binding protein 2 (MeCP2) is the founding member of a family of methyl-CpG-binding domain (MBD) proteins that also includes MBD1, MBD2, MBD3, MBD4, MBD5 and MBD6 (1-3). Apart from MBD3, these proteins bind methylated cytosine residues in the context of the di-nucleotide 5'-CG-3' to establish and maintain regions of transcriptionally inactive chromatin by recruiting a variety of co-repressor proteins (2). MeCP2 recruits histone deacetylases HDAC1 and HDAC2, and the DNA methyltransferase DNMT1 (4-6). MBD1 couples transcriptional silencing to DNA replication and interacts with the histone methyltransferases ESET and SUV39H1 (7,8). MBD2 and MBD3 co-purify as part of the NURD (nucleosome remodeling and histone de-acetylation) co-repressor complex, which contains the chromatin remodeling ATPase Mi-2, HDAC1 and HDAC2 (9,10). MBD5 and MBD6 have recently been identified and little is known regarding their protein interactions. MBD proteins are associated with cancer and other diseases; MBD4 is best characterized for its role in DNA repair and MBD2 has been linked to intestinal cancer (11,12). Mutations in the MeCP2 gene cause the neurologic developmental disorder Rett Syndrome (13). MeCP2 protein levels are high in neurons, where it plays a critical role in multiple synaptic processes (14). In response to various physiological stimuli, MeCP2 is phosphorylated on Ser421 and regulates the expression of genes controlling dendritic patterning and spine morphogenesis (14). Disruption of this process in individuals with altered MeCP2 may cause the pathological changes seen in Rett Syndrome.

**Specificity/Sensitivity:** MeCP2 (D4F3) XP™ Rabbit mAb detects endogenous levels of MeCP2 (both isoforms A and B). This antibody does not cross-react with other MBD proteins.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide (KLH-coupled) derived from the carboxy terminus of human MeCP2.



Western blot analysis of extracts from various cell lines using MeCP2 (D4F3) XP™ Rabbit mAb.



Confocal immunofluorescent analysis of SH-SY5Y cells using MeCP2 (D4F3) XP™ Rabbit mAb (green). Actin filaments have been labeled with DY-554 phalloidin (red).

**Entrez-Gene ID** #4204  
**Swiss-Prot Acc.** #P51608

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

**\*Species cross-reactivity is determined by western blot.**

**\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.**

**Recommended Antibody Dilutions:**

Western blotting	1:1000
Immunoprecipitation	1:25
Immunohistochemistry (Paraffin)	1:1600†
Unmasking buffer:	Citrate
Antibody diluent:	SignalStain® Antibody Diluent #8112
Detection reagent:	SignalStain® Boost (HRP, Rabbit) #8114
† Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.	
Immunofluorescence (IF-IC)	1:200

**For application specific protocols please see the web page for this product at [www.cellsignaling.com](http://www.cellsignaling.com).**

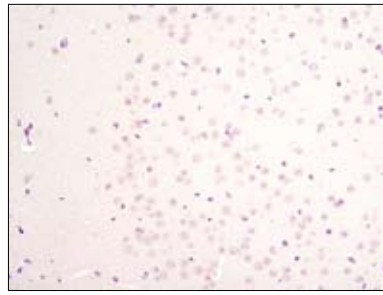
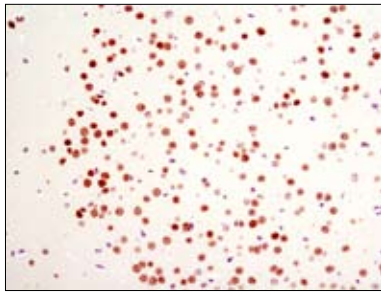
**Please visit [www.cellsignaling.com](http://www.cellsignaling.com) for a complete listing of recommended companion products.**

**Background References:**

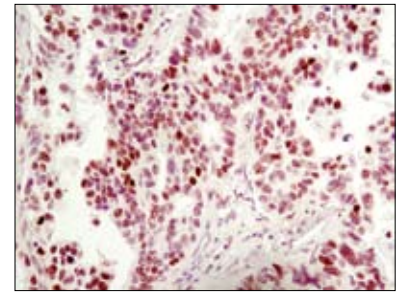
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- (3) Roloff, T.C. et al. (2003) *BMC Genomics* 4, 1.
- (4) Nan, X. et al. (1998) *Nature* 393, 386-9.
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- (8) Fujita, N. et al. (2003) *J Biol Chem* 278, 24132-8.
- (9) Zhang, Y. et al. (1999) *Genes Dev* 13, 1924-35.
- (10) Wade, P.A. et al. (1999) *Nat Genet* 23, 62-6.
- (11) Hendrich, B. et al. (1999) *Nature* 401, 301-4.
- (12) Sansom, O.J. et al. (2003) *Nat Genet* 34, 145-7.
- (13) Miltenberger-Miltenyi, G. and Laccone, F. (2003) *Hum Mutat* 22, 107-15.
- (14) Zhou, Z. et al. (2006) *Neuron* 52, 255-69.

**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.**

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine  
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



*Immunohistochemical analysis of paraffin-embedded mouse brain using MeCP2 (D4F3) XP™ Rabbit mAb in the presence of control peptide (left) and antigen-specific peptide (right).*



*Immunohistochemical analysis of paraffin-embedded human lung carcinoma using MeCP2 (D4F3) XP™ Rabbit mAb.*