



Orders: 877-616-CELL (2355)  
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

#34113 store at +4C

## MeCP2 (D4F3) XP<sup>®</sup> Rabbit mAb (PE Conjugate)

For Research Use Only. Not for Use in Diagnostic Procedures.

<b>Applications:</b> FC-FP	<b>Reactivity:</b> H M R Mk	<b>Sensitivity:</b> Endogenous	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #P51608	<b>Entrez-Gene Id:</b> 4204
-------------------------------	--------------------------------	-----------------------------------	--------------------------------------	-------------------------------	--------------------------------

### Product Usage Information

#### Application

Flow Cytometry (Fixed/Permeabilized)

#### Dilution

1:50

### Storage

Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

### Specificity/Sensitivity

MeCP2 (D4F3) XP<sup>®</sup> Rabbit mAb (PE Conjugate) 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 corresponding to the carboxy terminus of human MeCP2.

### Description

This Cell Signaling Technology antibody is conjugated to phycoerythrin (PE) and tested in-house for direct flow cytometric analysis in human cells. This antibody is expected to exhibit the same species cross-reactivity as the unconjugated MeCP2 (D4F3) XP<sup>®</sup> Rabbit mAb #3456.

### 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.

### Background References

1. Clouaire, T. and Stancheva, I. (2008) *Cell Mol Life Sci* 65, 1509-22.
2. Hendrich, B. and Bird, A. (1998) *Mol Cell Biol* 18, 6538-47.
3. Roloff, T.C. et al. (2003) *BMC Genomics* 4, 1.
4. Nan, X. et al. (1998) *Nature* 393, 386-9.
5. Jones, P.L. et al. (1998) *Nat Genet* 19, 187-91.
6. Fuks, F. et al. (2003) *J Biol Chem* 278, 4035-40.
7. Sarraf, S.A. and Stancheva, I. (2004) *Mol Cell* 15, 595-605.
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.

### Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

### Applications Key

**FC-FP:** Flow Cytometry (Fixed/Permeabilized)

**Cross-Reactivity Key**

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey

**Trademarks and Patents**

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

XP is a registered trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](http://cellsignal.com/trademarks) for more information.

**Limited Uses**

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.