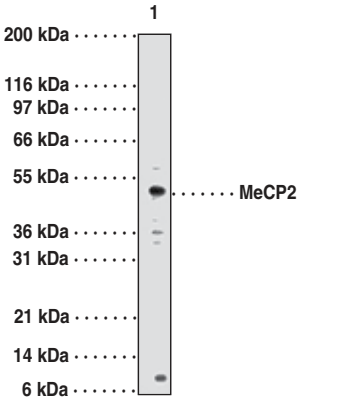
Product Information

MeCP2 Polyclonal Antibody

Item No. 13775

Contents: This vial contains 100 µg of protein G-purified IgG in 200 µl PBS containing 0.2% gelatin and 0.05% sodium azide.
Synonym: Methyl-CpG-Binding Protein 2
Antigen: Mixture of synthetic peptides corresponding to amino acids 11-25 and 181-195 of human MeCP2.
Host: Rabbit
Cross Reactivity: (+) Human MePC2
Storage: ≤6 months at 4°C; ≥6 months at -20°C
Application: Western blot (WB); the recommended starting concentration for WB is 2 µg/ml

DNA methylation, or the addition of methyl groups to cytosine bases in the dinucleotide CpG, is imperative to proper development and regulates gene expression. The methylation pattern involves the enzymatic processes of methylation and demethylation. A demethylase enzyme has been identified which exhibits demethylase activity associated to a methyl-CpG-binding domain (MBD).[1] The enzyme is able to revert methylated cytosine bases to cytosines within the particular dinucleotide sequence mdCpdG by catalyzing the cleaving of the methyl group as methanol. MeCP2 and MBD1 (PCM1) repress transcription by binding specifically to methylated DNA.[2] MBD2 and MBD4 (also known as MED1) colocalize with foci of heavily methylated satellite DNA and mediate the biological functions of the methylation signal. Surprisingly, MBD3 does not bind methylated DNA either *in vivo* or *in vitro*. MeCP2, MBD1, MBD2, MBD3, and MBD4 are expressed in somatic tissues, but the expression of MBD1 and MBD2 is reduced or absent in embryonic stem cells, which are known to be deficient in MeCP1 activity. MBD4 has homology to bacterial base excision repair DNA N-glycosylases/lyases.[3] In some microsatellite unstable tumors MBD4 is mutated at an exonic polynucleotide tract.[4]



Lane 1: HeLa cell lysate

References

1. Coy, J.F., Sedlacek, Z., Bächner, D., *et al.* A complex pattern of evolutionary conservation and alternative polyadenylation within the long 3'-untranslated region of the methyl-CpG-binding protein 2 gene (MeCP2) suggests a regulatory role in gene expression. *Hum. Mol. Genet.* **8(7)**, 1253-1262 (1999).
2. Petronzelli, F., Riccio, A., Markham, G.D., *et al.* Biphasic kinetics of the human DNA repair protein MED1 (MBD4), a mismatch-specific DNA N-glycosylase. *J. Biol. Chem.* **275(42)**, 32422-32429 (2000).
3. Hendrich, B., Bird, A. Identification and characterization of a family of mammalian methyl-CpG binding proteins. *Mol. Cell. Biol.* **18(11)**, 6538-6547 (1998).
4. Bhattacharya, S.K., Ramchandani, S., Cervoni, N., *et al.* A mammalian protein with specific demethylase activity for mCpG DNA. *Nature* **397**, 579-583 (1998).

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Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com