SANTA CRUZ BIOTECHNOLOGY, INC.

MeCP2 (N-17): sc-5755

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Methylation of DNA contributes to the regulation of gene transcription in both mammalian and invertebrate systems. DNA methylation predominates on cytosine residues that are present in dinucleotide motifs consisting of a 5' cytosine followed by guanosine (CpG), and it requires the enzymatic activity of DNA methyltransferase, which results in transcriptional repression of the methylated gene. Several proteins have been identified that associate with the methyl-CpG sites, and they include methyl-CpG binding protein-1 (MBD1), MBD2, MBD3 and MeCP2. Expression of the MBD proteins is highest in somatic tissues. MBD1 binds in a context specific manner to methyl-CpG rich domains and, in turn, mediates the transcriptional inhibition that is commonly observed with DNA methylation. Similarly, MBD2 inhibits transcription of methylated genes by associating with histone deacetylase (HDAC1) within the MeCP1 repressor complex. In addition, MBD4, which is also designated MED1, associates with the mismatch repair protein MLH1 and preferentially binds to methylated cytosine residues in mismatched base pairs. MeCP2 binds tightly to chromosomes in a methylation-dependent manner and associates with a corepressor complex containing the transcriptional repressor mSin3A and histone deacetylases.

REFERENCES

1. Boyes, J., et al. 1991. DNA methylation inhibits transcription indirectly via a methyl-CpG binding protein. Cell 64: 1123-1134.
2. Nan, X., et al. 1998. Transcriptional repression by the methyl-CpG-binding protein MeCP2 involves a histone deacetylase complex. Nature 393: 386-389.

CHROMOSOMAL LOCATION

Genetic locus: MECP2 (human) mapping to Xq28; Mecp2 (mouse) mapping to X A7.3.

SOURCE

MeCP2 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of MeCP2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-5755 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-5755 X, 200 µg/0.1 ml.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

MeCP2 (N-17) is recommended for detection of MeCP2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MeCP2 (N-17) is also recommended for detection of MeCP2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MeCP2 siRNA (h): sc-35892, MeCP2 siRNA (m): sc-35893, MeCP2 shRNA Plasmid (h): sc-35892-SH, MeCP2 shRNA Plasmid (m): sc-35893-SH, MeCP2 shRNA (h) Lentiviral Particles: sc-35892-V and MeCP2 shRNA (m) Lentiviral Particles: sc-35893-V.

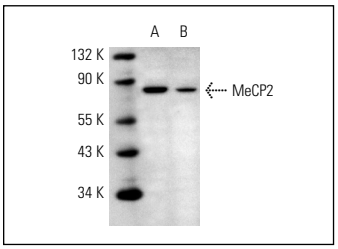
MeCP2 (N-17) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of MeCP2: 53 kDa.

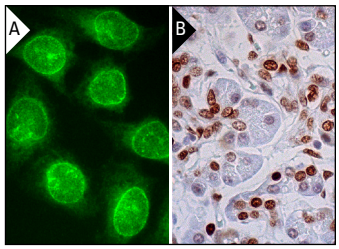
Molecular Weight (observed) of MeCP2: 55/75 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, K-562 nuclear extract: sc-2130 or HeLa nuclear extract: sc-2120.

DATA



MeCP2 (N-17): sc-5755. Western blot analysis of MeCP2 expression in Jurkat (**A**) and K-562 (**B**) nuclear extracts.



MeCP2 (N-17): sc-5755. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Wang, Y., et al. 2006. Association between enhanced type I collagen expression and epigenetic repression of the FLI1 gene in scleroderma fibroblasts. Arthritis Rheum. 54: 2271-2279.
2. Izutsu, N., et al. 2008. Epigenetic modification is involved in aberrant expression of class III β-Tubulin, TUBB3, in ovarian cancer cells. Int. J. Oncol. 32: 1227-1235.