SANTA CRUZ BIOTECHNOLOGY, INC.

SATB1 (E-15): sc-5990

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The homeoproteins CCAAT displacement protein (CDP) and special AT-rich sequence binding protein 1 (SATB1) are transcriptional repressors of many cellular genes, and they participate in cell development and cell type differentiation. SATB1 is expressed primarily in thymocytes, and, like CDP, it also contains a distinct homeobox DNA-binding domain that is essential for DNA binding. SATB1 and CDP interact through these homeo-domains and synergistically function as mediators of gene expression. SATB1 contains an additional domain that has a higher affinity for DNA and specifically facilitates the direct association between SATB1 and the nuclear matrix attachment regions (MARs) of DNA. MARs are specific DNA sequences that bind to the nuclear matrix and form the base of chromosomal loops that organize the chromosomes and regulate DNA transcription and replication within the nucleus. The association of SATB1 with the core unwinding element within the base-unpairing region of MARs requires both the MAR and homeobox binding domains of SATB1.

REFERENCES

1. Dickinson, L.A., et al. 1997. An atypical homeodomain in SATB1 promotes specific recognition of the key structural element in a matrix attachment region. J. Biol. Chem. 272: 11463-11470.
2. Banan, M., et al. 1997. Interaction of the nuclear matrix-associated region (MAR)-binding proteins, SATB1 and CDP/Cux, with a MAR element (L2α) in an upstream regulatory region of the mouse CD8α gene. J. Biol. Chem. 272: 18440-18452.
3. Chattopadhyay, S., et al. 1998. A nuclear matrix attachment region upstream of the T cell receptor β gene enhancer binds Cux/CDP and SATB1 and modulates enhancer-dependent reporter gene expression but not endogenous gene expression. J. Biol. Chem. 273: 29838-29846.

CHROMOSOMAL LOCATION

Genetic locus: SATB1 (human) mapping to 3p24.3; Satb1 (mouse) mapping to 17 C.

SOURCE

SATB1 (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SATB1 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-5990 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-5990 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.

APPLICATIONS

SATB1 (E-15) is recommended for detection of SATB1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). SATB1 (E-15) is also recommended for detection of SATB1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SATB1 siRNA (h): sc-36460, SATB1 siRNA (m): sc-36461, SATB1 shRNA Plasmid (h): sc-36460-SH, SATB1 shRNA Plasmid (m): sc-36461-SH, SATB1 shRNA (h) Lentiviral Particles: sc-36460-V and SATB1 shRNA (m) Lentiviral Particles: sc-36461-V.

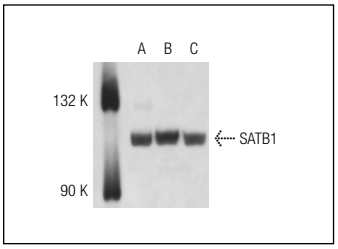
SATB1 (E-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of SATB1 isoforms: 86/89 kDa.

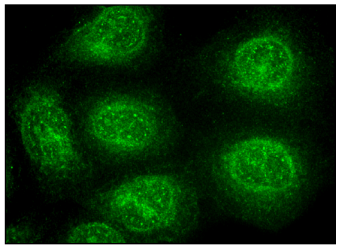
Molecular Weight (observed) of SATB1: 115 kDa.

Positive Controls: BJAB nuclear extract: sc-2145, C32 nuclear extract: sc-2136 or SK-BR-3 nuclear extract: sc-2134.

DATA



SATB1 (E-15): sc-5990. Western blot analysis of SATB1 expression in BJAB (**A**), C32 (**B**) and SK-BR-3 (**C**) nuclear extracts.



SATB1 (E-15): sc-5990. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Yasui, D., et al. 2002. SATB1 targets chromatin remodelling to regulate genes over long distances. Nature 419: 543-652.
2. Barboro, P., et al. 2012. The role of nuclear matrix proteins binding to matrix attachment regions (Mars) in prostate cancer cell differentiation. PLoS ONE 7: e40617.

RESEARCH USE

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