

SATB1 (C-6): sc-376096



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 homeodomains 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 (L2a) in an upstream regulatory region of the mouse CD8a gene. *J. Biol. Chem.* 272: 18440-18452.

CHROMOSOMAL LOCATION

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

SOURCE

SATB1 (C-6) is a mouse monoclonal antibody raised against amino acids 241-310 mapping within an internal region of SATB1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-376096 X, 200 µg/0.1 ml.

SATB1 (C-6) is available conjugated to agarose (sc-376096 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376096 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376096 PE), fluorescein (sc-376096 FITC), Alexa Fluor® 488 (sc-376096 AF488), Alexa Fluor® 546 (sc-376096 AF546), Alexa Fluor® 594 (sc-376096 AF594) or Alexa Fluor® 647 (sc-376096 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376096 AF680) or Alexa Fluor® 790 (sc-376096 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

SATB1 (C-6) is recommended for detection of SATB1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

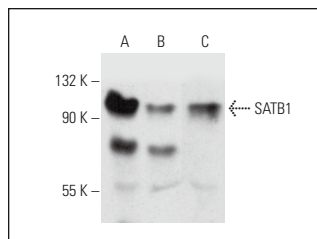
SATB1 (C-6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

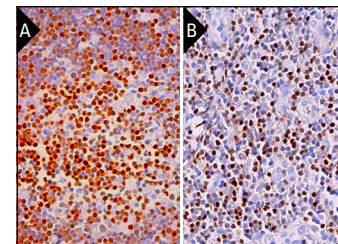
Molecular Weight (observed) of SATB1: 115 kDa.

Positive Controls: CTLL-2 cell lysate: sc-2242, MOLT-4 cell lysate: sc-2233 or Jurkat whole cell lysate: sc-2204.

DATA



SATB1 (C-6): sc-376096. Western blot analysis of SATB1 expression in Jurkat (A), MOLT-4 (B) and CTLL-2 (C) whole cell lysates.



SATB1 (C-6): sc-376096. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fetal thymus tissue showing nuclear staining of cortical cells and medullary cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of subset of cells in non-germinal center (B).

SELECT PRODUCT CITATIONS

1. Kumamaru, H., et al. 2019. Regenerating corticospinal axons innervate phenotypically appropriate neurons within neural stem cell grafts. *Cell Rep.* 26: 2329-2339.e4.
2. Verma, D.K., et al. 2021. α -synuclein preformed fibrils induce cellular senescence in Parkinson's disease models. *Cells* 10: 1694.
3. Hernández-Vivanco, A., et al. 2022. Sex-specific regulation of inhibition and network activity by local aromatase in the mouse hippocampus. *Nat. Commun.* 13: 3913.
4. Zelenka, T., et al. 2023. A novel SATB1 protein isoform with different biophysical properties. *Front. Cell Dev. Biol.* 11: 1242481.

RESEARCH USE

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