

PRODUCT INFORMATION

Product name : SATB1 antibody

Product type : Primary antibodies

Description : Rabbit polyclonal to SATB1

Immunogen : 3 synthetic peptides (human) conjugated to KLH

Reacts with : Hu, Ms

Tested applications : ELISA, WB and IF

GENE INFORMATION

Gene Symbol : SATB1

Gene Name : SATB homeobox 1

Ensembl ID : ENSG00000182568

Swiss-Prot : Q01826

Molecular weight of SATB1 : 89.1 & 86 kDa

Function : Crucial silencing factor contributing to the initiation of X inactivation mediated by Xist RNA that occurs during embryogenesis and in lymphoma. By similarity. Binds to DNA at special AT-rich sequences, the consensus SATB1-binding sequence (CSBS), at nuclear matrix- or scaffold-associated regions. Thought to recognize the sugar-phosphate structure of double-stranded DNA. Transcriptional repressor controlling nuclear and viral gene expression in a phosphorylated and acetylated status-dependent manner, by binding to matrix attachment regions (MARs) of DNA and inducing a local chromatin-loop remodeling. Acts as a docking site for several chromatin remodeling enzymes (e.g. PML at the MHC-I locus) and also by recruiting corepressors (HDACs) or coactivators (HATs) directly to promoters and enhancers. Modulates genes that are essential in the maturation of the immune T-cell CD8SP from thymocytes. Required for the switching of fetal globin species, and beta- and gamma-globin genes regulation during erythroid differentiation. Plays a role in chromatin organization and nuclear architecture during apoptosis. Interacts with the unique region (UR) of cytomegalovirus (CMV). Alu-like motifs and SATB1-binding sites provide a unique chromatin context which seems preferentially targeted by the HIV-1 integration machinery. Moreover, HIV-1 Tat may overcome SATB1-mediated repression of IL2 and IL2RA (interleukin) in T-cells by binding to the same domain than HDAC1. Delineates specific epigenetic modifications at target gene loci, directly up-regulating metastasis-associated genes while down-regulating tumor-suppressor genes. Reprograms chromatin organization and the transcription profiles of breast tumors to promote growth and metastasis.

Expected subcellular localization : Nucleus matrix. Nucleus > PML body. Note: Organized into a cage-like network anchoring loops of heterochromatin and tethering specialized DNA

sequences. When sumoylated, localized in promyelocytic leukemia nuclear bodies (PML NBs).

Expected tissue specificity : Expressed predominantly in thymus.

Summary: This gene encodes a matrix protein which binds nuclear matrix and scaffold-associating DNAs through a unique nuclear architecture. The protein recruits chromatin-remodeling factors in order to regulate chromatin structure and gene expression. Multiple transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Sep 2010]

APPLICATION NOTE

Recommended dilution :

- **ELISA:** Antibody specificity was verified by direct ELISA against the 3 immunogen peptides. A minimum titer of 1/2500 has been determined. Appropriate specificity controls were run.
- **WB (recombinant protein):** 1/1000.
- **WB (cell lysate):** 1/250.
- **IF:** 1/1000.

Optimal dilutions/concentration should be determined by the end user.

Raised in : Rabbit

Clonality : Polyclonal

Isotype : IgG

Purity : Purified Antibody

Storage buffer : 0.5 X PBS, containing a final concentration of 50% glycerol, 0.1% BSA and 0.01% Thimerosal.

Form : Liquid

Storage instruction : Store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.

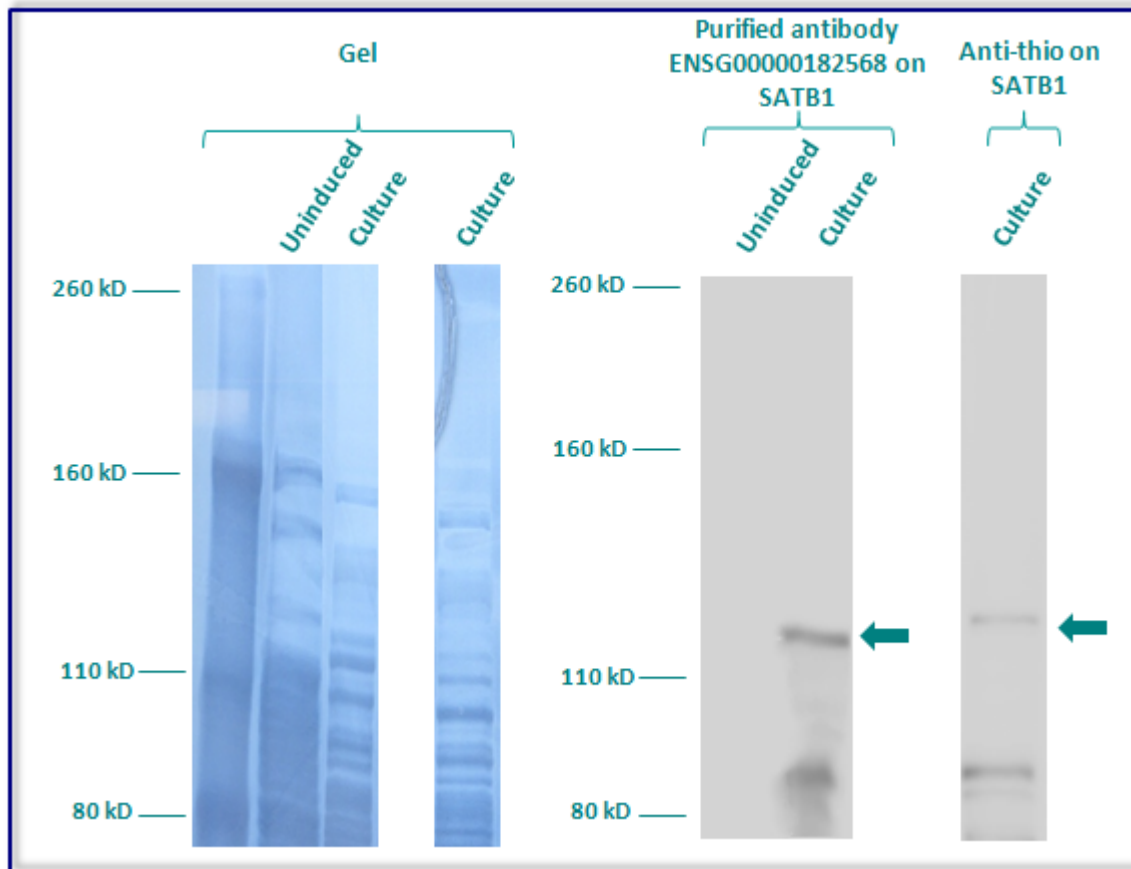
WESTERN BLOT ON RECOMBINANT PROTEIN

The purified antibody ENSG00000182568 has been tested at 1/1000 on uninduced (negative control) and induced culture of E.coli (one shot Top10 competent cells).

An anti-thio (positive control) has been tested at 1/5000 on uninduced (negative control) and induced culture of E.coli (one shot Top10 competent cells) as a positive control.

Plasmid name : pBAD-DEST49.

Molecular weight of SATB1 : 100kDa (86kDa + another 14kDa for the tag).



Gel concentration: 5%

Blocking: in 5% non-fat milk-PBST solution

1st Antibody: The antibodies are diluted in blocking buffer.

- Dilute the purified antibody ENSG00000182568 at 1:1000
- Dilute the anti-thio at 1:5000

60 minutes of incubation

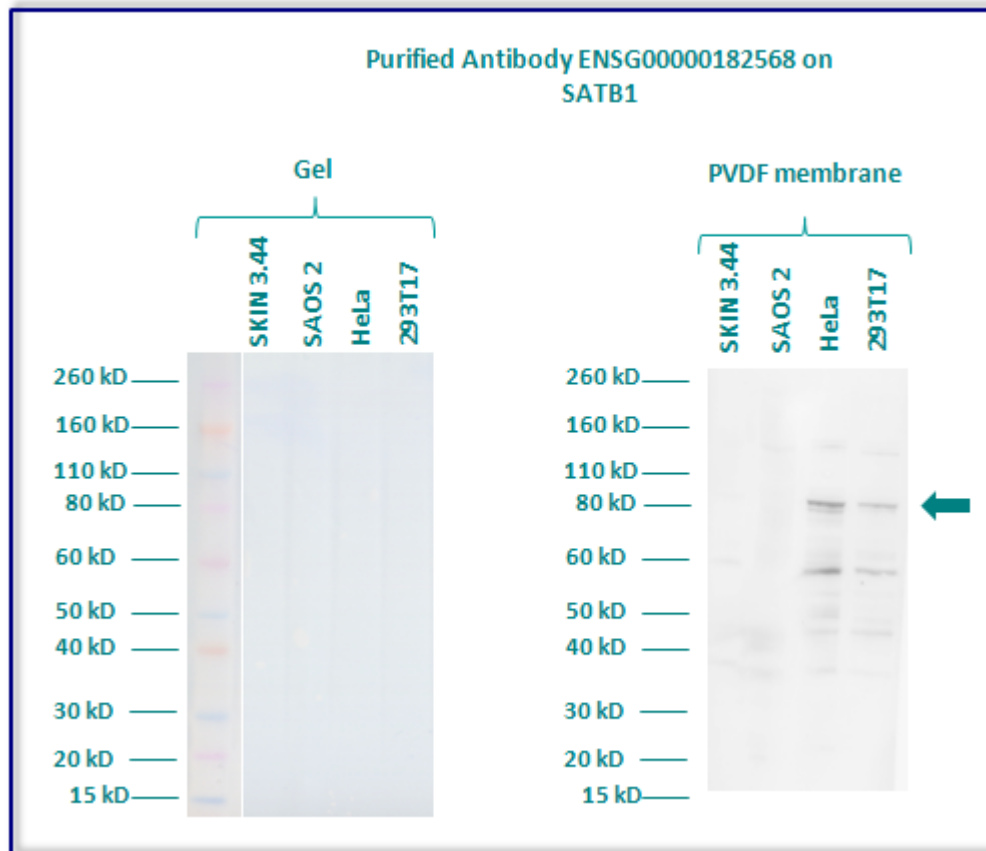
2nd Antibody: The antibody is diluted in blocking buffer.

- Dilute the anti-Rabbit IgG HRP conjugated at 1/10000
- 60 minutes of incubation

WESTERN BLOT ON CELL LYSATE

The purified antibody ENSG00000182568 has been tested at a concentration of 1/250 on total protein extract of various cell lines (SKIN 3.44, SAOS 2, HeLa & 293T17).

Molecular weight of SATB1 : 89 & 86kDa



Gel concentration: 10%

Blocking: in 5% non-fat milk-PBST solution

1st Antibody: The antibodies are diluted in blocking buffer.

- Dilute the purified antibody ENSG00000182568 at 1:250
60 minutes of incubation

2nd Antibody: The antibody is diluted in blocking buffer.

- Dilute the anti-Rabbit IgG HRP conjugated at 1/10000
60 minutes of incubation

IMMUNOFLUORESCENCE ANALYSIS

Immunofluorescence analysis of DNA-binding protein SATB1 (SATB1) expression in 4 cells lines (HELA, Capan-2, SH-SY5Y, Skin 3,44). The purified Antibody ENSG00000182568 has been tested at 1/1000.

Red staining : cytoskeleton (microtubules/ α -tubuline)

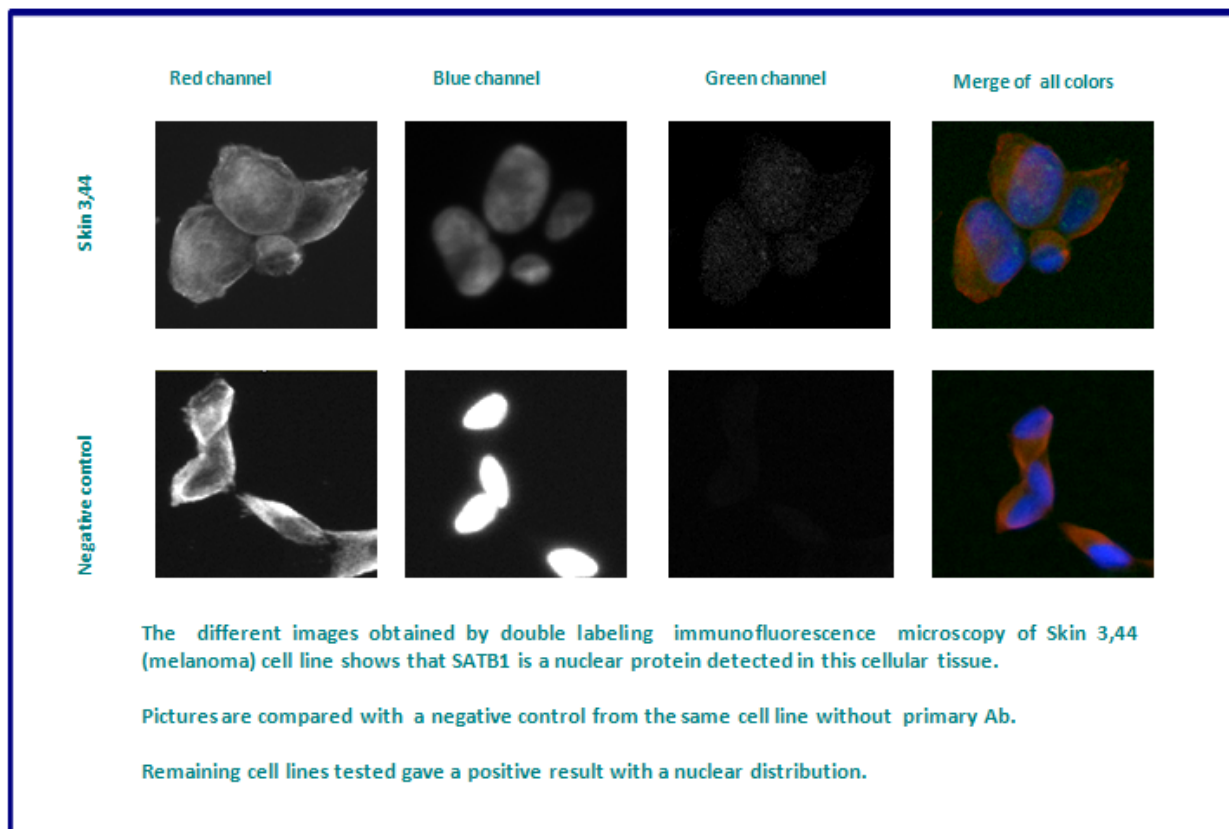
Blue staining : nucleus (Hoechst)

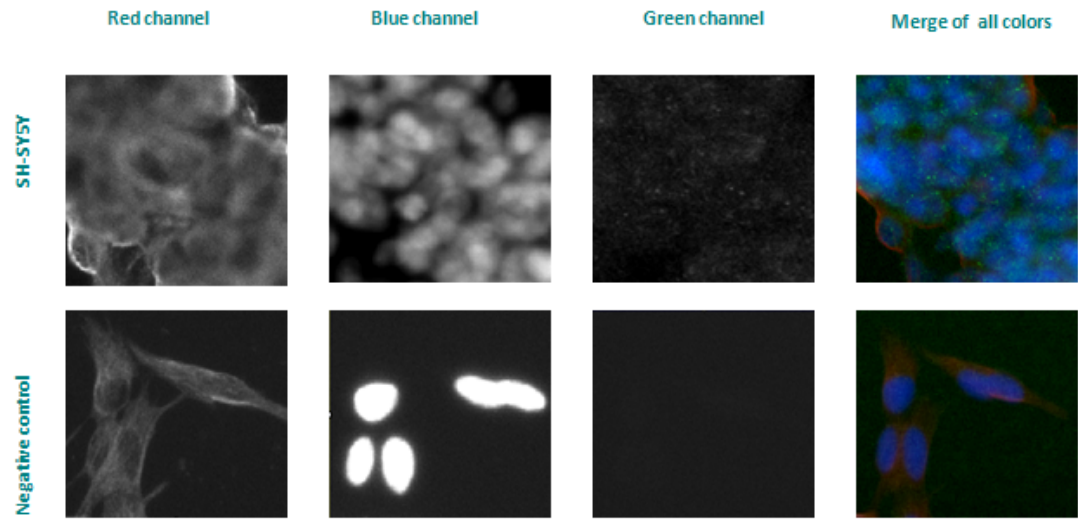
Green staining : anti- SATB1 antibody (purified)

Expected subcellular location : Nucleus matrix. Nucleus > PML body.

Note: Organized into a cage-like network anchoring loops of heterochromatin and tethering specialized DNA sequences. When sumoylated, localized in promyelocytic leukemia nuclear bodies (PML NBs)

Expected tissue specificity : Expressed predominantly in thymus





The different images obtained by double labeling immunofluorescence microscopy of SH-SY5Y (neuroblastoma) cell line shows that SATB1 is a nuclear protein detected in this cellular tissue.

Pictures are compared with a negative control from the same cell line without primary Ab.