PRODUCT INFORMATION

Product name：SATB1 antibody

Product type： Primary antibodies

Description： Mouse monoclonal to SATB1

Immunogen：1 synthetic peptide (human) conjugated to KLH

Reacts with： Hu, Ms

Tested applications：ELISA, WB & IF

GENE INFORMATION

Gene Symbol：SATB1

Gene Name：SATB homeobox 1

Ensembl ID：ENSG00000182568

Entrez GeneID：6304

Swiss-Prot：Q01826

Molecular weight：89.1 & 86kDa

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 1 immunogen peptide. A titer of 52000 has been determined. Appropriate specificity controls were run.**
- **WB: Dilution 1/5000**
- **IF: Dilution 1/50**

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

Raised in：Mouse

Clonality：Monoclonal

Isotype：IgG

Purity：Purified Antibody

Concentration: 2mg/ml

Storage buffer： Containing a final concentration of PBS/glycerol (V/V), 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

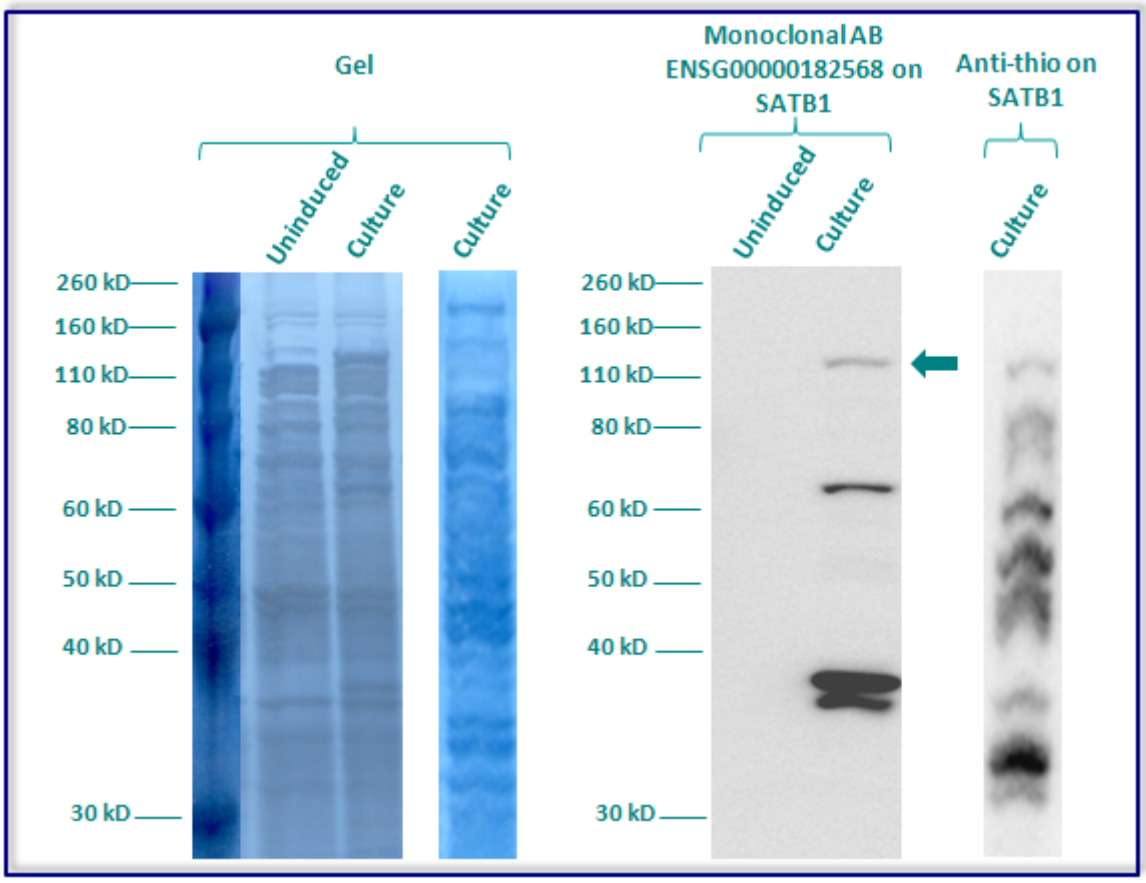
The monoclonal purified antibody ENSG00000182568 has tested at 1/5000 on uninduced (negative control) and induced culture of E.coli (one shot Top10 competent cells).

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

Clone : 4A11E6C6E6F4, Isotype : G1; kappa

Plasmid name : pBAD-DEST49.

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



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 1:5000**
- **Dilute the anti-thio at 1:5000**

60 minutes of incubation
2nd Antibody: The antibody is diluted in blocking buffer.

- **Dilute the anti-Mouse IgG HRP conjugated at 1/10000**

60 minutes of incubation

IMMUNOFLUORESCENCE ANALYSIS

Immunofluorescence analysis of DNA-binding protein SATB1 (SATB1) expression in 6 cells lines (HELA, 293T/17, Capan-2, SAOS-2, SH-SY5Y, Skin 3,44). The monoclonal antibody ENSG00000182568 has been tested at 1/50.

Green staining : cytoskeleton (microtubules/α-tubuline)

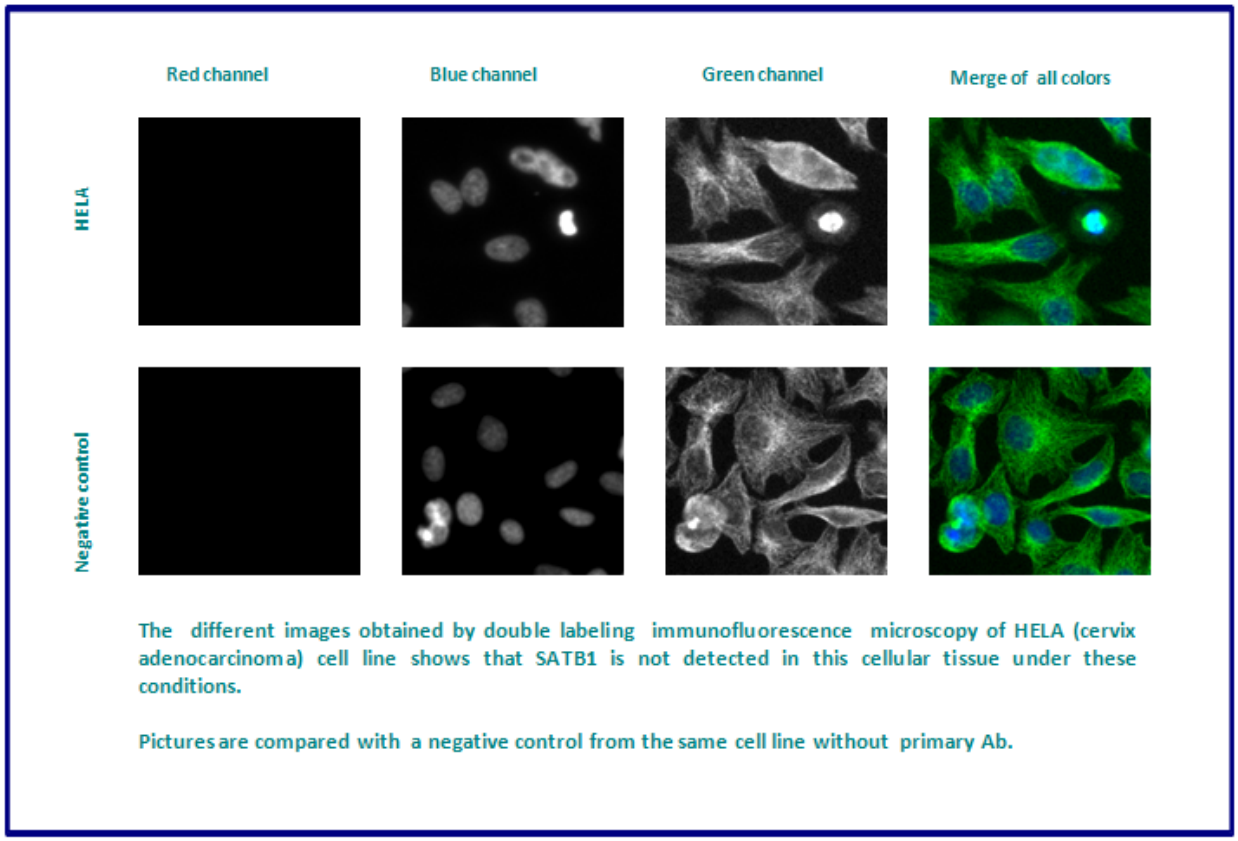
Blue staining : nucleus (Hoechst)

Red staining : anti- SATB1 antibody (purified)

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

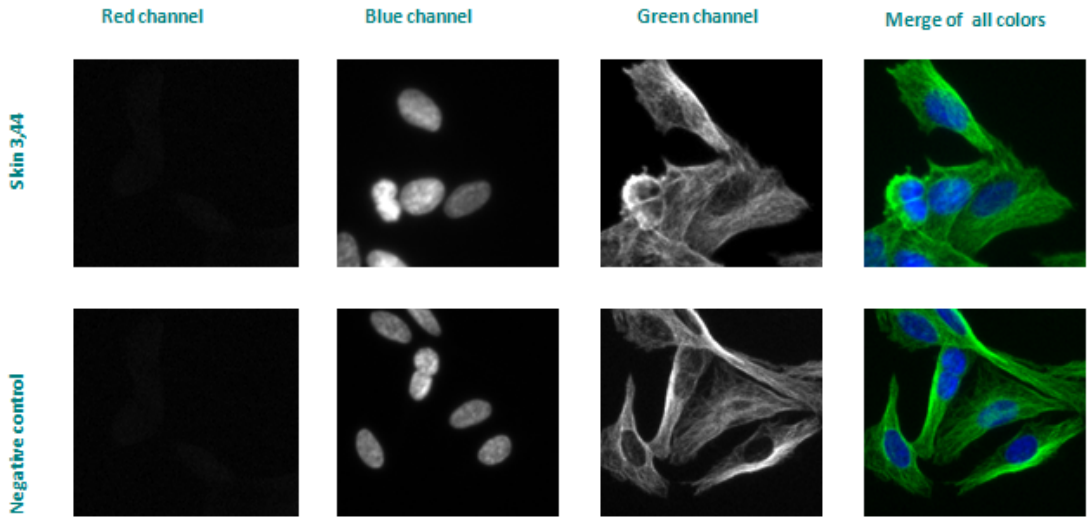
Note: Organized into a cage-like network anchoring loops of heterochromatin and tethering specialized DNA sequences. When sumoylated, localized in promyelocytic leukemia nuclear bodies (PML NBs)

Expected tissue specificity : Expressed predominantly in thymus



The different images obtained by double labeling immunofluorescence microscopy of HELA (cervix adenocarcinoma) cell line shows that SATB1 is not detected in this cellular tissue under these conditions.

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



The different images obtained by double labeling immunofluorescence microscopy of Skin 3,44 (melanoma) cell line shows that SATB1 is not detected in this cellular tissue under these conditions.

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

Remaining cell lines testetd gave a negative result under these conditions.