abcam

ab227685

Anti-SATB1 antibody [SP280] - C-terminal

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.6 Preservative: 0.099% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	SP280
Purification technique	Affinity purification Protein A/G
Purification notes	Purified from TCS by protein A/G.

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Predicted

Species	Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/400
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

Target data

See full target information SATB1

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 as 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. Promotes neuronal differentiation of neural stem/progenitor cells in the adult subventricular zone, possibly by positively regulating the expression of NEUROD1 (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	SATB1 or Special AT-rich Sequence Binding Protein 1 is a nuclear matrix-associated protein with a mass of approximately 85 kDa. It modifies chromatin structure by organizing the density of DNA through loop formation which regulates gene expression. SATB1 is expressed in thymocytes breast tissue and various other cell types and plays a significant role in cellular differentiation and development. It binds selectively to base-unpairing regions allowing it to influence expression patterns of multiple genes.
Biological function summary	SATB1 acts as a genome organizer and transcription regulator by linking chromatin remodeling complexes to specific genomic loci. It participates in chromatin loop domain organization influencing higher-order chromatin structure and gene silencing or activation. SATB1 does not usually work alone but rather associates with corepressors such as HDAC1 and coactivators like PCAF in regulating transcription. Its functions have been noted as particularly important in T cell development where it assists in the regulation of T cell receptor genes.
Pathways	SATB1 integrates into the Wnt signaling pathway and influences the Notch signaling pathway. The protein interacts with β-catenin in the Wnt pathway aiding in sustaining key developmental processes. In the Notch signaling pathway SATB1 influences cell fate decisions impacting differentiation and proliferation through its interaction with RBP-Jκ and other transcription modulators. MUTYH and LRP6 are among the proteins within these pathways influenced by SATB1's regulatory capacity.

Associated diseases and disorders	SATB1 links to various cancer types including breast cancer and colorectal cancer. Overexpression of SATB1 can drive tumor progression and metastasis by altering gene expression landscapes. It's known to affect pathways regulated by proteins like BRCA1 in breast cancer contributing to disease pathogenicity. In immune disorders such as autoimmune diseases SATB1 interacts with STAT5 impacting cytokine signaling pathways and thereby influencing immunological tolerance and efficacy.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

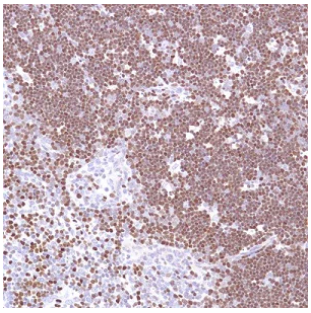
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

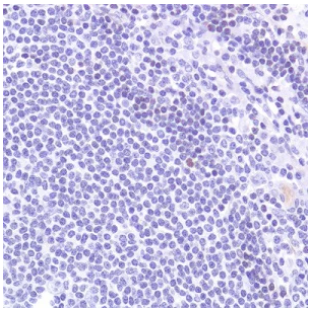
3 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SATB1 antibody [SP280] - C-terminal (ab227685)

SATB1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SATB1 antibody

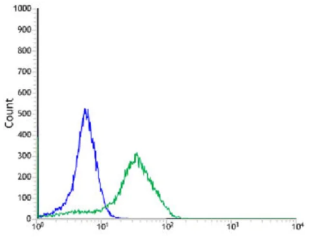
Formalin-fixed, paraffin-embedded human thymus tissue stained for SATB1 using ab227685 at 1/100 dilution in immunohistochemical analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SATB1 antibody [SP280] - C-terminal (ab227685)

SATB1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SATB1 antibody

Formalin-fixed, paraffin-embedded human lymph node tissue stained for SATB1 using ab227685 at 1/100 dilution in immunohistochemical analysis.



Flow Cytometry (Intracellular) - Anti-SATB1 antibody [SP280] - C-terminal (ab227685)

SATB1 Flow Cytometry (Intracellular) staining using rabbit Anti-SATB1 antibody

Flow Cytometry analysis of PC-3 (human prostate adenocarcinoma cell line) cells, labeling SATB1 with ab227685 at 1/400 dilution (green) compared to a Rabbit IgG negative control (blue).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.