Revision 1

Store at -20C

#3643

SATB1 (P472) Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R	Endogenous	100	Rabbit	#Q01826	6304

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:25

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

SATB1 (P472) Antibody detects endogenous levels of total SATB1 protein.

Species predicted to react based on 100% sequence homology

Monkey, Bovine, Pig, Horse

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the human SATB1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Special AT-rich binding protein 1 (SATB1) functions as both a global chromatin organizer and a gene-specific transcription factor (1). SATB1 cooperates with promyelocytic leukemia protein (PML) to regulate global chromatin architecture by organizing chromatin into distinct loops via periodic anchoring of matrix attachment regions (MARs) in DNA to the nuclear matrix (1-3). In addition, SATB1 recruits multiple chromatin-remodeling proteins that contribute to specific gene activation and repression, including the chromatin remodeling enzymes ACF and ISWI, the histone deacetylase HDAC1, and the histone acetyltransferases PCAF and p300/CBP (4-6). Phosphorylation of SATB1 on Ser185 by protein kinase C regulates its interaction with HDAC1 and PCAF. While unphosphorylated SATB1 binds to PCAF, phosphorylated SATB1 preferentially binds to HDAC1 (6). Acetylation of SATB1 on Lys136 by PCAF impairs its DNA binding activity, thereby removing SATB1 from gene promoters (6). SATB1 is expressed predominantly in thymocytes and is involved in gene regulation during T cell activation (1). SATB1 is also expressed in metastatic breast cancer cells and is a potential prognostic marker and therapeutic target for metastatic breast cancer (7). In a mouse model system, RNAi-mediated knockdown of SATB1 reversed tumorigenesis by inhibiting tumor growth and metastasis, while ectopic expression of SATB1 in non-metastatic breast cancer cells produced invasive tumors.

Background References

1. Galande, S. et al. (2007) *Curr Opin Genet Dev* 17, 408-14.
2. Cai, S. et al. (2006) *Nat Genet* 38, 1278-88.
3. Kumar, P.P. et al. (2007) *Nat Cell Biol* 9, 45-56.
4. Yasui, D. et al. (2002) *Nature* 419, 641-5.
5. Kumar, P.P. et al. (2005) *Mol Cell Biol* 25, 1620-33.
6. Pavan Kumar, P. et al. (2006) *Mol Cell* 22, 231-43.
7. Han, H.J. et al. (2008) *Nature* 452, 187-93.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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