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Rabbit Anti-SATB2/AP Conjugated antibody

SL11949R-AP

Product Name	Anti-SATB2/AP
Chinese Name	碱性磷酸酶（AP）标记的 DNABinding protein2 抗体
Alias	DNA binding protein SATB2; DNA-binding protein SATB2; FLJ21474; FLJ32076; KIAA1034; MGC119474; MGC119477; SATB family member 2; SATB homeobox 2; SATB2; SATB2_HUMAN; Special AT rich sequence binding protein 2; Special AT-rich sequence-binding protein 2.
Research Area	Developmental biology Neurobiology Signal transduction Binding protein
Immunogen Species	Rabbit
Clonality	Polyclonal
React Species	Human,Mouse,Rat(predicted:Cow,Horse,Sheep)
Applications	IHC-P=1:100-500,IHC-F=1:100-500 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight	83kDa
Form	Lyophilized or Liquid
Concentration	1mg/ml
immunogen	KLH conjugated synthetic peptide derived from human SATB2 (451-485aa)
Lsotype	IgG
Purification	affinity purified by Protein A
Storage Buffer	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 1M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
Product Detail	**background:** SATB2 is a nuclear matrix protein that influences craniofacial formation mechanisms, such as jaw and palate development, and is part of a transcriptional network regulating skeletal development and osteoblast differentiation. Highly expressed in adult and fetal brain, SATB2 contains two CUT DNA-binding domains and one homeobox domain and is closely related

to SATB1, a transcriptional repressor. SATB2 is thought to bind to matrix-attachment regions (MARs) and regulate MAR-dependent transcription of various genes, including HoxA2 and ATF4 (CREB-2), involved in skeletal development. Functioning as both a transcriptional activator and repressor, SATB2 can also act as a protein scaffold that can enhance the activity of other DNA-binding proteins. Defects in the gene encoding SATB2 are the cause of cleft palate manifested in conjunction with severe mental retardation.

Function:
Binds to DNA, at nuclear matrix- or scaffold-associated regions. Thought to recognize the sugar-phosphate structure of double-stranded DNA. Transcription factor controlling nuclear gene expression, 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 and also by recruiting corepressors (HDACs) or coactivators (HATs) directly to promoters and enhancers. Required for the initiation of the upper-layer neurons (UL1) specific genetic program and for the inactivation of deep-layer neurons (DL) and UL2 specific genes, probably by modulating BCL11B expression. Repressor of Ctip2 and regulatory determinant of corticocortical connections in the developing cerebral cortex. May play an important role in palate formation. Acts as a molecular node in a transcriptional network regulating skeletal development and osteoblast differentiation.

Subunit:
Interacts with ATF4 and RUNX2; resulting in enhanced DNA binding and transactivation by these transcription factors (By similarity). Interacts with PIAS1.

Subcellular Location:
Nucleus matrix.

Tissue Specificity:
High expression in adult brain, moderate expression in fetal brain, and weak expression in adult liver, kidney, and spinal cord and in select brain regions, including amygdala, corpus callosum, caudate nucleus, and hippocampus.

Post-translational modifications:
Sumoylated by PIAS1. Sumoylation promotes nuclear localization, but represses transcription factor activity.

DISEASE:
Note=Chromosomal aberrations involving SATB2 are found in isolated cleft palate. Translocation t(2;7); translocation t(2;11). Defects in SATB2 are a

cause of cleft palate isolated (CPI) [MIM:119540]. A congenital fissure of the soft and/or hard palate, due to faulty fusion. Isolated cleft palate is not associated with cleft lips. Some patients may manifest other craniofacial dysmorphic features, mental retardation, and osteoporosis. Note=A chromosomal aberration involving SATB2 is found in a patient with classical features of Toriello-Carey syndrome. Translocation t(2;14)(q33;q22).

Similarity:
Belongs to the CUT homeobox family.
Contains 2 CUT DNA-binding domains.
Contains 1 homeobox DNA-binding domain.

Database links:

Entrez Gene: 23314 Human

Entrez Gene: 212712 Mouse

Entrez Gene: 501145 Rat

Omim: 608148 Human

SwissProt: Q3ZB87 Human

SwissProt: Q4V763 Human

SwissProt: Q9UPW6 Human

SwissProt: Q546B3 Mouse

SwissProt: Q8VI24 Mouse

SwissProt: D3ZJ19 Rat

Unigene: 516617 Human

Unigene: 145599 Mouse

Unigene: 216103 Rat

Important Note:
This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.