SANTA CRUZ BIOTECHNOLOGY, INC.

SATB2 (H-118): sc-98677

BACKGROUND

SATB2 (special AT-rich sequence-binding protein 2) 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 ATF-4 (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.

REFERENCES

1. FitzPatrick, D.R., et al. 2003. Identification of SATB2 as the cleft palate gene on 2q32-q33. Hum. Mol. Genet. 12: 2491-2501.
2. Dobreva, G., et al. 2003. SUMO modification of a novel MAR-binding protein, SATB2, modulates immunoglobulin μ gene expression. Genes Dev. 17: 3048-3061.
3. Britanova, O., et al. 2005. Novel transcription factor SATB2 interacts with matrix attachment region DNA elements in a tissue-specific manner and demonstrates cell-type-dependent expression in the developing mouse CNS. Eur. J. Neurosci. 21: 658-668.
4. Szemes, M., et al. 2006. Isolation and characterization of SATB2, a novel AT-rich DNA-binding protein expressed in development- and cell-specific manner in the rat brain. Neurochem. Res. 31: 237-246.
5. Dobreva, G., et al. 2006. SATB2 is a multifunctional determinant of craniofacial patterning and osteoblast differentiation. Cell 125: 971-986.
6. Beaty, T.H., et al. 2006. Analysis of candidate genes on chromosome 2 in oral cleft case-parent trios from three populations. Hum. Genet. 120: 501-518.
7. Britanova, O., et al. 2006. SATB2 haploinsufficiency phenocopies 2q32-q33 deletions, whereas loss suggests a fundamental role in the coordination of jaw development. Am. J. Hum. Genet. 79: 668-678.
8. Leoyklang, P., et al. 2007. Heterozygous nonsense mutation SATB2 associated with cleft palate, osteoporosis, and cognitive defects. Hum. Mutat. 28: 732-738.

CHROMOSOMAL LOCATION

Genetic locus: SATB2 (human) mapping to 2q33.1; Satb2 (mouse) mapping to 1 C1.3.

SOURCE

SATB2 (H-118) is a rabbit polyclonal antibody raised against amino acids 225-342 mapping within an internal region of SATB2 of human origin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SATB2 (H-118) is recommended for detection of SATB2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SATB2 (H-118) is also recommended for detection of SATB2 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for SATB2 siRNA (h): sc-76456, SATB2 siRNA (m): sc-76457, SATB2 siRNA (r): sc-61891, SATB2 shRNA Plasmid (h): sc-76456-SH, SATB2 shRNA Plasmid (m): sc-76457-SH, SATB2 shRNA Plasmid (r): sc-61891-SH, SATB2 shRNA (h) Lentiviral Particles: sc-76456-V, SATB2 shRNA (m) Lentiviral Particles: sc-76457-V and SATB2 shRNA (r) Lentiviral Particles: sc-61891-V.

Molecular Weight of SATB2: 105 kDa.

Positive Controls: HT-1080 whole cell lysate: sc-364183.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.