SANTA CRUZ BIOTECHNOLOGY, INC.

TAL2 (N-14): sc-46267

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The Power to Question

BACKGROUND

LYL1, TAL1 and TAL2 are part of a family of basic helix-loop-helix (bHLH) proteins implicated in T cell acute leukemia. TAL1 (also designated SCL) is a serine phosphoprotein and basic helix-loop-helix transcription factor known to regulate embryonic hematopoiesis. Lyl-1 (lymphoblastic leukemia derived sequence 1) is a nuclear protein. T cell acute lymphocytic leukemia-2 protein (TAL2), is involved in T cell acute lymphoblastic leukemia through a chromosomal translocation involving TAL2 and T cell receptor β chain genes. TAL2 includes a helix-loop-helix protein dimerization and DNA binding domain that is homologous to TAL1 and Lyl-1 protooncogenes. In leukemic cells TAL2 exists in both a phosphorylated (pp13TAL2) and an unphosphorylated (p12TAL2) form. A chromosomal aberration involving TAL2 may be a cause of some T cell acute lymphoblastic leukemia (T-ALL). TAL2 interacts with the E2A proteins (E47 and E12) to form bHLH heterodimers that can bind DNA in a sequence-specific manner.

REFERENCES

1. Xia, Y., et al. 1991. TAL2, a helix-loop-helix gene activated by the (7;9)(q34;q32) translocation in human T cell leukemia. Proc. Natl. Acad. Sci. USA 88: 11416-11420.
2. Green, A.R. and Begley, C.G. 1992. SCL and related hemopoietic helix-loop-helix transcription factors. Int. J. Cell Cloning 10: 269-276.
3. Goldfarb, A.N., et al. 1992. T-cell acute lymphoblastic leukemia—the associated gene SCL/TAL codes for a 42 kDa nuclear phosphoprotein. Blood 80: 2858-2866.
4. Baer, R. 1993. TAL1, TAL2 and LYL1: a family of basic helix-loop-helix proteins implicated in T cell acute leukaemia. Sem. Cancer Biol. 4: 341-347.
5. Xia, Y., et al. 1994. Products of the TAL2 oncogene in leukemic T cells: bHLH phosphoproteins with DNA-binding activity. Oncogene 9: 1437-1446.
6. Wadman, I., et al. 1994. Specific *in vivo* association between the bHLH and LIM proteins implicated in human T cell leukemia. EMBO J. 13: 4831-4839.
7. Mahajan, M.A., et al. 1996. Association of a novel GTP binding protein, DRG, with TAL oncogenic proteins. Oncogene 12: 2343-2350.
8. Garbossa, G., et al. 1998. Oral aluminum administration to rats with normal renal function. Hum. Exp. Toxicol. 17: 318-322.

CHROMOSOMAL LOCATION

Genetic locus: TAL2 (human) mapping to 9q31.2, TAL1 (human) mapping to 1p32; Tal2 (mouse) mapping to 4 B2, Tal1 (mouse) mapping to 4 D1.

SOURCE

TAL2 (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within the DNA binding domain of TAL2 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-46267 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-46267 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TAL2 (N-14) is recommended for detection of TAL2 and TAL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); may cross-react with LYL1.

TAL2 (N-14) is also recommended for detection of TAL2 and TAL1 in additional species, including canine, bovine and avian.

TAL2 (N-14) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of TAL2: 12 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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