

# p-TAL1 (Ser 122): sc-12962

## BACKGROUND

Activation of TAL1 characterizes up to 60% of cases of human T cell acute lymphoblastic leukemia, making it the most frequent gain-of-function mutation observed in this disorder. TAL1 (also designated SCL) is a 40 kDa Serine phosphoprotein and basic helix-loop-helix transcription factor known to regulate embryonic hematopoiesis. This transcription factor binds as a heterodimer with E2A and HEB/HTF4 to a nucleotide sequence motif termed the E-box. In addition, leukemogenesis is accelerated dramatically by transgenic co-expression of TAL1 and the catalytic subunit of casein kinase II  $\alpha$ , a Serine/Threonine protein kinase known to modulate the activity of other  $\beta$ HLH transcription factors. Phosphorylation of Serine 122 is induced by epidermal growth factor with a rapid time course that parallels activation of the ERK/MAP2 protein kinases. Phosphorylation of Serine 122 is a substrate for the mitogen-activated protein kinase ERK 1 (extracellular-signal-regulated protein kinase).

## REFERENCES

- Hsu, H.L., et al. 1991. Enhancer-binding activity of the TAL1 oncoprotein in association with the E47/E12 helix-loop-helix proteins. *Mol. Cell. Biol.* 11: 3037-3042.
- Cheng, J.T., et al. 1993. Phosphorylation of the TAL1 oncoprotein by the extracellular-signal-regulated protein kinase ERK 1. *Mol. Cell. Biol.* 13: 801-808.
- Bash, R.O., et al. 1995. Does activation of the TAL1 gene occur in a majority of patients with T cell acute lymphoblastic leukemia? A pediatric oncology group study. *Blood* 86: 666-676.
- Kelliher, M.A., et al. 1996. TAL1 induces T cell acute lymphoblastic leukemia accelerated by casein kinase II  $\alpha$ . *EMBO J.* 15: 5160-5166.
- Chetty, R., et al. 1996. An immunohistochemical study of TAL1 protein expression in leukaemias and lymphomas with a novel monoclonal antibody, 2TL 242. *J. Pathol.* 178: 311-315.
- Tang, T., et al. 1999. Mitogen-activated protein kinase mediates erythropoietin-induced phosphorylation of the TAL1/SCL transcription factor in murine proerythroblasts. *Biochem. J.* 343: 615-620.

## CHROMOSOMAL LOCATION

Genetic locus: TAL1 (human) mapping to 1p32; Tal1 (mouse) mapping to 4 D1.

## SOURCE

p-TAL1 (Ser 122) is a goat polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 122 of TAL1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12962 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

p-TAL1 (Ser 122) is recommended for detection of Ser 122 phosphorylated TAL1 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

Suitable for use as control antibody for TAL1 siRNA (h): sc-36608, TAL1 siRNA (m): sc-36609, TAL1 shRNA Plasmid (h): sc-36608-SH, TAL1 shRNA Plasmid (m): sc-36609-SH, TAL1 shRNA (h) Lentiviral Particles: sc-36608-V and TAL1 shRNA (m) Lentiviral Particles: sc-36609-V.

p-TAL1 (Ser 122) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of full-length TAL1: 42 kDa.

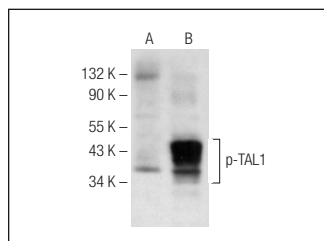
Molecular Weight of truncated TAL1: 24 kDa.

Positive Controls: TAL1 (h): 293T Lysate: sc-172270.

## 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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 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<sup>™</sup> Mounting Medium: sc-24941.

## DATA



p-TAL1 (Ser 122)-R: sc-12962-R. Western blot analysis of TAL1 phosphorylation in non-transfected: sc-117752 (A) and human TAL1 transfected: sc-172270 (B) 293T whole cell lysates.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.