



## Pre-TCR $\alpha$ (E-15): sc-23091

### BACKGROUND

Maturation of cytotoxic T lymphocytes is mediated in part by a structure on the T cell surface known as the T cell antigen receptor (TCR) complex. The pre-TCR complex consists of pre-TCR alpha, pre-TCR beta and CD3, which together help coordinate early thymocyte development. Pre-TCR alpha chain is a 33 kDa type I transmembrane glycoprotein with an extracellular region similar to the constant domain of the immunoglobulin supergene family. Notch3 transgenic mice lacking pre-TCR alpha inhibits tumor development. In humans, acute lymphoblastic leukemias (ALL) in remission have lower transcript levels of Notch3, HES-1 and pre-TCR alpha transcripts a and b relative to proliferating ALLs. The human pre-TCR alpha gene is expressed in immature T cells and maps to chromosome 6p21.3.

### REFERENCES

1. Del Porto, P., et al. 1995. Cloning and comparative analysis of the human pre-T-cell receptor alpha-chain gene. *Proc. Natl. Acad. Sci. USA* 92: 12105-12109.
2. von Boehmer, H., et al. 1997. Structure and function of the pre-T cell receptor. *Annu. Rev. Immunol.* 15: 433-452.
3. Kosugi, A., et al. 1997. Subunit composition of the pre-T-cell receptor complex analysed by monoclonal antibody against the pre-T-cell receptor alpha chain. *Immunol.* 91: 618-622.
4. Saint-Ruf, C., et al. 1998. Genomic structure of the human pre-T cell receptor alpha chain and expression of two mRNA isoforms. *Eur. J. Immunol.* 28: 3824-3831.
5. Bellavia, D., et al. 2002. Combined expression of pT alpha and Notch3 in T cell leukemia identifies the requirement of preTCR for leukemogenesis. *Proc. Natl. Acad. Sci. USA* 99: 3788-3793.
6. Online Mendelian Inheritance in Man, OMIM™. Johns Hopkins University, Baltimore, MD. MIM Number: 606817: 4/3/2002: World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. LocusLink Report (LocusID: 171558). <http://www.ncbi.nlm.nih.gov/LocusLink>

### CHROMOSOMAL LOCATION

Genetic locus: PTCRA (human) mapping to 6p21.3; Ptcra (mouse) mapping to 17 D-E1.

### SOURCE

Pre-TCR $\alpha$  (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Pre-TCR $\alpha$  of mouse 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-23091 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

Pre-TCR $\alpha$  (E-15) is recommended for detection of Pre-TCR $\alpha$  of mouse, rat and, to a lesser extent, 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).

### 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.

### STORAGE

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

### RESEARCH USE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.