

TCR V β (T-14): sc-169543

BACKGROUND

The T cell antigen receptor (TCR) recognizes foreign antigens and translates such recognition events into intracellular signals that elicit a change in the cell from a dormant to an activated state. TCR is a heterodimer composed of either α and β or γ and δ chains. The vast majority of circulating T cells (95%) express the α/β heterodimer while roughly 2-5% express the γ/δ heterodimer. Recognizing such a variety of antigens requires diverse specificities in the TCR repertoire. This is obtained by the somatic recombination of variable (V), diversity (D) and joining (J) gene segments in the assembly of each TCR chain. The TCR β and γ chain genes lie in distinct loci, while the genes encoding the TCR α and δ chains comprise a single locus. During T cell development, the β chain is synthesized by first joining a D segment with a J segment, then adding a V segment with the D-J gene, and later a C segment. Genetic mutations involving the T cell receptor β locus have been associated with T cell lymphomas.

REFERENCES

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2. Behlke, M.A., et al. 1987. Expression of a murine polyclonal T cell receptor marker correlates with the use of specific members of the V β 8 gene segment subfamily. *J. Exp. Med.* 165: 257-262.
3. Ito, M., et al. 1987. Methods for the selection and growth of antigen-specific cytolytic T lines and clones bearing a defined T cell receptor β chain marker. *J. Immunol. Methods* 103: 229-237.
4. Mokyr, M.B., et al. 1993. Involvement of TCR-V β 8.3⁺ cells in the cure of mice bearing a large MOPC-315 tumor by low dose melphalan. *J. Immunol.* 151: 4838-4846.
5. Formby, B., et al. 1993. T cell vaccination against autoimmune diabetes in nonobese diabetic mice. *Ann. Clin. Lab. Sci.* 23: 137-147.
6. Dieli, F., et al. 1994. Dominant V β 8 gene usage in response to TNP: failure to use other V β chains following removal of V β 8⁺ T cells by monoclonal antibody *in vivo*. *Immunology* 82: 99-105.
7. Bleux, C., et al. 1995. A mouse monoclonal antibody specific for the V β 5.3 chain of the human TcR recognizes a subgroup of the mouse TcR V β 8.2 chains. *J. Leukoc. Biol.* 57: 491.

CHROMOSOMAL LOCATION

Genetic locus: TRB (human) mapping to 7p22.3.

SOURCE

TCR V β (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TCR V β 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 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-169543 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TCR V β (T-14) is recommended for detection of TCR V β of 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).

TCR V β (T-14) is also recommended for detection of TCR V β in additional species, including equine.

Suitable for use as control antibody for TCR β siRNA (h): sc-36629, TCR β shRNA Plasmid (h): sc-36629-SH and TCR β shRNA (h) Lentiviral Particles: sc-36629-V.

Molecular Weight of TCR V β : 15 kDa.

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.