

TCR V β 16 (3H3009): sc-73127

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

1. Staerz, U.D., et al. 1985. Characterization of a murine monoclonal antibody specific for an allotypic determinant on T cell antigen receptor. *J. Immunol.* 134: 3994-4000.
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.

SOURCE

TCR V β 16 (3H3009) is a mouse monoclonal antibody raised against PVG RT7.2 thymocytes of rat origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

TCR V β 16 (3H3009) is recommended for detection of TCR V β 16 of mouse and rat origin by immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

Molecular Weight of TCR V β 16: 34 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RESEARCH USE

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

PROTOCOLS

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