

TCR V α 8 (3H3002): sc-73132

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. The assembled TCR α chain includes only V and J segments. In mice, 104 V α segments and 61 J α segments are found at the α/δ loci. The human α/δ loci has about half as many V α segments and approximately the same number of J α segments.

REFERENCES

1. Sleckman, B.P., Bassing, C.H., Bardoni, C.G., Okada, A., Khor, B., Bories, J.C., Monroe, R. and Alt, F.W. 1998. Accessibility control of variable region gene assembly during T-cell development. *Immunol. Rev.* 165: 121-130.
2. Yannoutsos, N., Wilson, P., Yu, W., Chen, H.T., Nussenzweig, A., Petrie, H. and Nussenzweig, M.C. 2001. The role of recombination activating gene (RAG) reinduction in thymocyte development *in vivo*. *J. Exp. Med.* 194: 471-480.
3. Bassing, C.H., Tillman, R.E., Woodman, B.B., Canty, D., Monroe, R.J., Sleckman, B.P. and Alt, F.W. 2003. T cell receptor (TCR) α/δ locus enhancer identity and position are critical for the assembly of TCR δ and α variable region genes. *Proc. Natl. Acad. Sci. USA* 100: 2598-2603.
4. Hawwari, A. and Krangel, M.S. 2005. Regulation of TCR δ and α repertoires by local and long-distance control of variable gene segment chromatin structure. *J. Exp. Med.* 202: 467-472.
5. Kawachi, I., Maldonado, J., Strader, C. and Gilfillan, S. 2006. MR1-restricted V α 19i mucosal-associated invariant T cells are innate T cells in the gut lamina propria that provide a rapid and diverse cytokine response. *J. Immunol.* 176: 1618-1627.
6. Huang, C.Y. and Sleckman, B.P. 2007. Developmental stage-specific regulation of TCR- α -chain gene assembly by intrinsic features of the TEA promoter. *J. Immunol.* 179: 449-454.
7. Parra, Z.E., Baker, M.L., Schwarz, R.S., Deakin, J.E., Lindblad-Toh, K. and Miller, R.D. 2007. A unique T cell receptor discovered in marsupials. *Proc. Natl. Acad. Sci. USA* 104: 9776-9781.
8. Scott-Browne, J.P., Matsuda, J.L., Mallevey, T., White, J., Borg, N.A., McCluskey, J., Rossjohn, J., Kappler, J., Marrack, P. and Gapin, L. 2007. Germline-encoded recognition of diverse glycolipids by natural killer T cells. *Nat. Immunol.* 8: 1105-1113.

SOURCE

TCR V α 8 (3H3002) is a rat monoclonal antibody raised against V α 8 T cell receptor of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

TCR V α 8 (3H3002) is available conjugated to either phycoerythrin (sc-73132 PE) or fluorescein (sc-73132 FITC), 200 μ g/ml, for IF, IHC(P) and FCM.

APPLICATIONS

TCR V α 8 (3H3002) is recommended for detection of TCR V α 8 of mouse origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

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 for detailed protocols and support products.