

TCR β (H-197): sc-9101

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. CD3 chains and the CD4 or CD8 co-receptors are also required for efficient signal transduction through the TCR. The TCR is expressed on T helper and T cytotoxic cells that can be distinguished by their expression of CD4 and CD8. T helper cells express CD4 proteins and T cytotoxic cells display CD8. CD4 is also expressed on cortical cells, mature medullary thymocytes, microglial cells and dendritic cells. CD4, also designated T4 and Leu 3, is a membrane glycoprotein that contains four extracellular immunoglobulin-like domains. The TCR, in association with CD4, can bind class II MHC molecules presented by the antigen-presenting cells. The CD4 protein functions by increasing the avidity of the interaction between the TCR and an antigen-class II MHC complex.

CHROMOSOMAL LOCATION

Genetic locus: TRBC1 (human) mapping to 7q34; Tcrb (mouse) mapping to 6.

SOURCE

TCR β (H-197) is a rabbit polyclonal antibody raised against the constant region of TCR β of human origin.

PRODUCT

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

APPLICATIONS

TCR β (H-197) is recommended for detection of TCR β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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), immunohistochemistry (including paraffin-embedded sections) (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 TCR β siRNA (h): sc-36629, TCR β siRNA (m): sc-36630, TCR β shRNA Plasmid (h): sc-36629-SH, TCR β shRNA Plasmid (m): sc-36630-SH, TCR β shRNA (h) Lentiviral Particles: sc-36629-V and TCR β shRNA (m) Lentiviral Particles: sc-36630-V.

Molecular Weight of TCR β : 39 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233 or CCRF-CEM cell lysate: sc-2225.

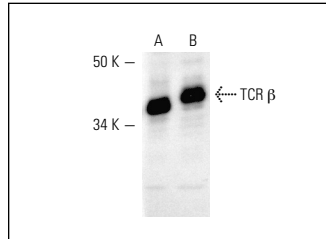
STORAGE

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

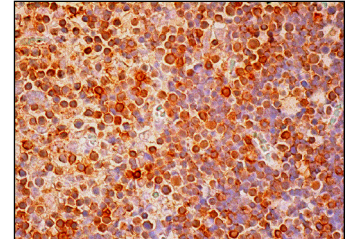
RESEARCH USE

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

DATA



TCR β (H-197): sc-9101. Western blot analysis of TCR β expression in MOLT-4 (A) and CCRF-CEM (B) whole cell lysates.



TCR β (H-197): sc-9101. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fetal thymus tissue showing membrane and cytoplasmic staining of cortical cells and medullary cells.

SELECT PRODUCT CITATIONS

1. Tsuzaka, K., et al. 2003. TCR ζ mRNA with an alternatively spliced 3'-untranslated region detected in systemic lupus erythematosus patients leads to the down-regulation of TCR ζ and TCR/CD3 complex. *J. Immunol.* 171: 2496-2503.
2. Zhong, L., et al. 2004. ζ -associated protein of 70 kDa (ZAP-70), but not Syk, tyrosine kinase can mediate apoptosis of T cells through the FAS/FAS ligand, caspase-8 and caspase-3 pathways. *J. Immunol.* 172: 1472-1482.
3. Chen, I.J., et al. 2007. Lateral compartmentalization of T cell receptor versus CD45 by galectin-N-glycan binding and microfilaments coordinate basal and activation signaling. *J. Biol. Chem.* 282: 35361-35372.
4. Tan, Y., et al. 2008. A novel recurrent chromosomal inversion implicates the homeobox gene Dlx5 in T-cell lymphomas from Lck-Akt2 transgenic mice. *Cancer Res.* 68: 1296-1302.
5. Rosenkranz, A.C., et al. 2009. Regulation of protease-activated receptor-1 by vasodilatory prostaglandins via NFAT. *Cardiovasc. Res.* 83: 778-784.
6. Shani, N., et al. 2009. Incomplete T-cell receptor- β peptides target the mitochondrion and induce apoptosis. *Blood* 113: 3530-3541.
7. Cui, P.H., et al. 2010. Impaired transactivation of the human CYP2J2 arachidonic acid epoxygenase gene in HepG2 cells subjected to nitrate stress. *Br. J. Pharmacol.* 159: 1440-1449.

PROTOCOLS

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