

TCR α (H-142): sc-9100



The Power to Question

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 coreceptors 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.

REFERENCES

- Maddon, P.J., et al. 1987. Structure and expression of human and mouse T4 genes. *Proc. Natl. Acad. Sci. USA* 84: 9155-9159.
- Arthos, J., et al. 1989. Identification of the residues in human CD4 critical for the binding of HIV. *Cell* 57: 469-481.

CHROMOSOMAL LOCATION

Genetic locus: TRA α (human) mapping to 14q11.2; Tcra (mouse) mapping to 14 C2.

SOURCE

TCR α (H-142) is a rabbit polyclonal antibody raised against the constant region of TCR α 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 α (H-142) is recommended for detection of TCR α 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 and 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 α siRNA (h): sc-36626, TCR α siRNA (m): sc-37273, TCR α shRNA Plasmid (h): sc-36626-SH, TCR α shRNA Plasmid (m): sc-37273-SH, TCR α shRNA (h) Lentiviral Particles: sc-36626-V and TCR α shRNA (m) Lentiviral Particles: sc-37273-V.

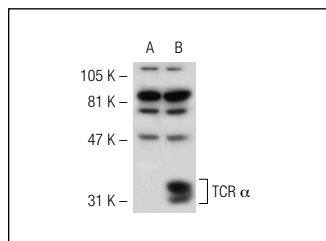
Molecular Weight of TCR α : 34 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HUT 78 whole cell lysate: sc-2208 or TCR α (h): 293T Lysate: sc-111693.

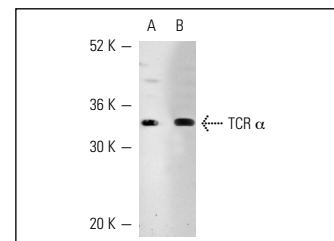
STORAGE

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

DATA



TCR α (H-142): sc-9100. Western blot analysis of TCR α expression in non-transfected: sc-117752 (A) and human TCR α transfected: sc-111693 (B) 293T whole cell lysates.



TCR α (H-142): sc-9100. Western blot analysis of TCR α expression in K-562 (A) and HuT-78 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Tsuzaka, K., et al. 2003. TCR ζ mRNA with an alternatively spliced 3'-untranslated region detected in systemic lupus erythematosus patients leads to the downregulation of TCR ζ and TCR/CD3 complex. *J. Immunol.* 171: 2496-2503.
- Dadi, H.K., et al. 2003. Effect of CD3- δ deficiency on maturation of α/β and γ/δ T-cell lineages in severe combined immunodeficiency. *N. Eng. J. Med.* 349: 1821-1828.
- Myers, M.D., et al. 2005. Src-like adaptor protein down-regulates T cell receptor (TCR)-CD3 expression by targeting TCR ζ for degradation. *J. Cell. Biol.* 170: 285-294.
- Løset, G.A., et al. 2007. Functional phage display of two murine α/β T-cell receptors is strongly dependent on fusion format, mode and periplasmic folding assistance. *Protein Eng. Des. Sel.* 20: 461-472.
- Morgan, N.V., et al. 2011. Mutation in the TCR α subunit constant gene (TRAC) leads to a human immunodeficiency disorder characterized by a lack of TCR $\alpha\beta$ ⁺ T cells. *J. Clin. Invest.* E-Published.

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.



Try **TCR α (H28-710): sc-101410**, our highly recommended monoclonal alternative to TCR α (H-142).