

TCR α (H28-710): sc-101410

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

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4. Weiss, A., Irving, B.A., Tan, L.K. and Koretzky, G.A. 1991. Signal transduction by the T cell antigen receptor. *Semin. Immunol.* 3: 313-324.
5. Allison, J.P. and Havran, W.L. 1991. The immunobiology of T cells with invariant γ/δ antigen receptors. *Annu. Rev. Immunol.* 9: 679-705.
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8. Vignali, D.A. 1994. The interaction between CD4 and MHC class II molecules and its effect on T cell function. *Behring Inst. Mitt.* 94: 133-147.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: Tcr α (mouse) mapping to 14 C2.

SOURCE

TCR α (H28-710) is a Armenian hamster monoclonal antibody raised against TCR α of mouse origin.

PRODUCT

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

TCR α (H28-710) is available conjugated to agarose (sc-101410 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-101410 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-101410 PE), fluorescein (sc-101410 FITC), Alexa Fluor® 488 (sc-101410 AF488), Alexa Fluor® 546 (sc-101410 AF546), Alexa Fluor® 594 (sc-101410 AF594) or Alexa Fluor® 647 (sc-101410 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-101410 AF680) or Alexa Fluor® 790 (sc-101410 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

TCR α (H28-710) is recommended for detection of TCR α of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for TCR α siRNA (m): sc-37273, TCR α shRNA Plasmid (m): sc-37273-SH and TCR α shRNA (m) Lentiviral Particles: sc-37273-V.

Molecular Weight of TCR α : 34 kDa.

SELECT PRODUCT CITATIONS

1. Brazin, K.N., Mallis, R.J., Boeszoermenyi, A., Feng, Y., Yoshizawa, A., Reche, P.A., Kaur, P., Bi, K., Hussey, R.E., Duke-Cohan, J.S., Song, L., Wagner, G., Arthanari, H., Lang, M.J. and Reinherz, E.L. 2018. The T cell antigen receptor α transmembrane domain coordinates triggering through regulation of bilayer immersion and CD3 subunit associations. *Immunity* 49: 829-841.e6.
2. Fukushima, Y., Sakamoto, K., Matsuda, M., Yoshikai, Y., Yagita, H., Kitamura, D., Chihara, M., Minato, N. and Hattori, M. 2022. *Cis* interaction of CD153 with TCR/CD3 is crucial for the pathogenic activation of senescence-associated T cells. *Cell Rep.* 40: 111373.

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.