

TCR δ (H-41): sc-100289

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.

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.
- Healey, D., et al. 1990. Novel anti-CD4 monoclonal antibodies separate human immunodeficiency virus infection and fusion of CD4⁺ cells from virus binding. *J. Exp. Med.* 172: 1233-1242.
- Weiss, A., et al. 1991. Signal transduction by the T cell antigen receptor. *Semin. Immunol.* 3: 313-324.
- 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.

SOURCE

TCR δ (H-41) is a mouse monoclonal antibody raised against recombinant TCR δ of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

TCR δ (H-41) is recommended for detection of TCR δ of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of TCR δ : 36 kDa.

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.

SELECT PRODUCT CITATIONS

- Jungbluth, A.A., et al. 2018. Immunohistochemical detection of γ/δ T lymphocytes in formalin-fixed paraffin-embedded tissues. *Appl. Immunohistochem. Mol. Morphol.* 27: 581-583.
- Pulitzer, M., et al. 2018. T-cell receptor- δ expression and $\gamma\delta^+$ T-cell infiltrates in primary cutaneous $\gamma\delta$ T-cell lymphoma and other cutaneous T-cell lymphoproliferative disorders. *Histopathology* 73: 653-662.
- Rodig, S.J., et al. 2018. MHC proteins confer differential sensitivity to CTLA-4 and PD-1 blockade in untreated metastatic melanoma. *Sci. Transl. Med.* 10: eaar3342.
- Oishi, N., et al. 2019. Cutaneous lesions of angioimmunoblastic T-cell lymphoma: clinical, pathological, and immunophenotypic features. *J. Cutan. Pathol.* 46: 637-644.
- Jin, C., et al. 2019. Commensal microbiota promote lung cancer development via $\gamma\delta$ T cells. *Cell* 176: 998-1013.
- Liu, C.Y., et al. 2020. Malignant effusions from extranodal NK/T-cell lymphomas are frequently of anaplastic morphology with azurophilic granules and of T-cell lineage. *Diagn. Cytopathol.* 48: 453-463.
- Daniels, J., et al. 2020. Cellular origins and genetic landscape of cutaneous $\gamma\delta$ T cell lymphomas. *Nat. Commun.* 11: 1806.
- Chabab, G., et al. 2020. Identification of a regulatory V δ 1 $\gamma\delta$ T cell subpopulation expressing CD73 in human breast cancer. *J. Leukoc. Biol.* 107: 1057-1067.
- Beucke, N., et al. 2020. Pitfalls in the characterization of circulating and tissue-resident human $\gamma\delta$ T cells. *J. Leukoc. Biol.* 107: 1097-1105.
- Chabab, G., et al. 2020. Diversity of tumor-infiltrating, $\gamma\delta$ T-cell abundance in solid cancers. *Cells* 9: 1537.
- Siegers, G.M., et al. 2020. Aberrantly expressed embryonic protein NODAL alters breast cancer cell susceptibility to $\gamma\delta$ T cell cytotoxicity. *Front. Immunol.* 11: 1287.
- Divito, S.J., et al. 2020. Peripheral host T cells survive hematopoietic stem cell transplantation and promote graft-versus-host disease. *J. Clin. Invest.* 130: 4624-4636.
- Lehmann, N., et al. 2020. Tumor lipids of pediatric papillary renal cell carcinoma stimulate unconventional T cells. *Front. Immunol.* 11: 1819.
- Zhao, N., et al. 2021. Intratumoral $\gamma\delta$ T-cell infiltrates, CCL4/5 protein expression and survival in patients with hepatocellular carcinoma. *Hepatology* 73: 1045-1060.

PROTOCOLS

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