

TCR γ/δ (V65): sc-19601

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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- 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., et al. 1991. The immuno-biology of T cells with invariant γ/δ antigen receptors. Annu. Rev. Immunol. 9: 679-705.
- Julius, M., et al. 1993. Distinct roles for CD4 and CD8 as co-receptors in antigen receptor signalling. Immunol. Today 14: 177-183.
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CHROMOSOMAL LOCATION

Genetic locus: Tcrg (mouse) mapping to 13 A2, Tcrd (mouse) mapping to 14 C2.

SOURCE

TCR γ/δ (V65) is a mouse monoclonal antibody raised against a suspension of rat CD3⁺ α/β TCR- T cell hybridoma III.89.1.4.

STORAGE

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

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for biological studies, sc-19601 L, 200 μ g/0.1 ml.

TCR γ/δ (V65) is available conjugated to agarose (sc-19601 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-19601 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-19601 PE), fluorescein (sc-19601 FITC), Alexa Fluor[®] 488 (sc-19601 AF488), Alexa Fluor[®] 546 (sc-19601 AF546), Alexa Fluor[®] 594 (sc-19601 AF594) or Alexa Fluor[®] 647 (sc-19601 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-19601 AF680) or Alexa Fluor[®] 790 (sc-19601 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

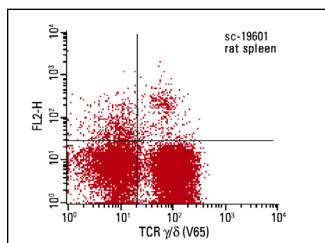
TCR γ/δ (V65) is recommended for detection of TCR γ and TCR δ of mouse and rat origin by immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

Molecular Weight of TCR γ/δ : 45-60 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



TCR γ/δ (V65): sc-19601. Indirect FCM analysis of rat spleen cells stained with TCR γ/δ (V65), followed by PE-conjugated donkey anti-mouse IgG₁. Kindly provided by Prof. Huenig at University of Wuertzburg, Germany.

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.