

CD45RA (14.8): sc-18865

BACKGROUND

CD45R, also designated CD45 and PTPRC, has been identified as a transmembrane glycoprotein, broadly expressed among hematopoietic cells. Multiple isoforms of CD45R are distributed throughout the immune system according to cell type. These isoforms arise because of alternative splicing of exons 4, 5, and 6. The corresponding protein domains are characterized by the binding of monoclonal antibodies specific for CD45RA (exon 4), CD45RB (exon 5), CD45RC (exon 6) and CD45RO (exons 4 to 6 spliced out). The variation in these isoforms is localized to the extracellular domain of CD45R, while the intracellular domain is conserved. CD45R functions as a phosphotyrosine phosphatase, a vital component for efficient tyrosine phosphorylation induction by the TCR/CD3 complex. The tyrosine phosphatase activity of CD45R is contained within the conserved intracellular domain. Src and Syk family protein tyrosine kinases are utilized by the TCR/CD3 complex to initiate signaling cascades. Several members of these two families, including Lck, Fyn and ZAP-70, have been implicated as physiological substrates of CD45R.

REFERENCE

1. Woollett, G.R., et al. 1985. Molecular and antigenic heterogeneity of the rat leukocyte-common antigen from thymocytes and T and B lymphocytes. *Eur. J. Immunol.* 15: 168-173.
2. West, K.P., et al. 1986. The demonstration of B-cell, T-cell and myeloid antigens in paraffin sections. *J. Pathol.* 150: 89-101.
3. Streuli, M., et al. 1987. Differential usage of three exons generates at least five different mRNAs encoding human leukocyte common antigens. *J. Exp. Med.* 166: 1548.
4. Hall, P.A., et al. 1987. New marker of B lymphocytes, MB2: comparison with other lymphocyte subset markers active in conventionally processed tissue sections. *J. Clin. Pathol.* 40: 151.
5. Poppema, S., et al. 1987. Monoclonal antibodies (MT1, MT2, MB1, MB2, MB3) reactive with leukocyte subsets in paraffin-embedded tissue sections. *Am. J. Pathol.* 127: 418.

CHROMOSOMAL LOCATION

Genetic locus: PTPRC (human) mapping to 1q31.3; Ptprc (mouse) mapping to 1 E4.

SOURCE

CD45RA (14.8) is a rat monoclonal antibody raised by immunizing rats with W279B B lymphoma cells of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for biological studies, sc-18865 L, 200 µg/0.1 ml.

CD45RA (14.8) is available conjugated to either phycoerythrin (sc-18865 PE) or fluorescein (sc-18865 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

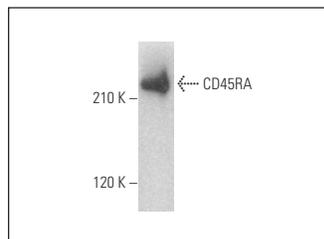
CD45RA (14.8) is recommended for detection of CD45RA of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

Suitable for use as control antibody for CD45 siRNA (h): sc-29251, CD45 siRNA (m): sc-35001, CD45 shRNA Plasmid (h): sc-29251-SH, CD45 shRNA Plasmid (m): sc-35001-SH, CD45 shRNA (h) Lentiviral Particles: sc-29251-V and CD45 shRNA (m) Lentiviral Particles: sc-35001-V.

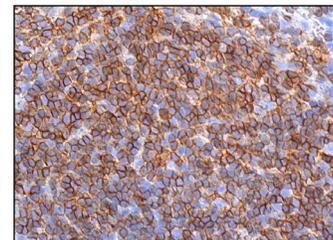
Molecular Weight of CD45RA: 180-220 kDa.

Positive Controls: mouse spleen extract: sc-2391.

DATA



CD45RA (14.8): sc-18865. Western blot analysis of CD45RA expression in mouse spleen tissue extract.



CD45RA (14.8): sc-18865. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing membrane staining of cells in white pulp and cells in red pulp.

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.

PROTOCOLS

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