SANTA CRUZ BIOTECHNOLOGY, INC.

CD45RB (16A): sc-18846

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.

REFERENCES

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. 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: 1548-1566.
3. McMichael, A.J., et al (Eds.). 1987. Leucocyte Typing III. Oxford: Oxford University Press.
4. Bottomly, K., et al. 1989. A monoclonal antibody to murine CD45R distinguishes CD4 T cell populations that produce different cytokines. Eur. J. Immunol. 19: 617-623.

CHROMOSOMAL LOCATION

Genetic locus: Ptprc (mouse) mapping to 1 E4.

SOURCE

CD45RB (16A) is a rat monoclonal antibody raised against clone TH2 cells expressing CD45RB of mouse origin.

PRODUCT

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

CD45RB (16A) is available conjugated to agarose (sc-18846 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-18846 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-18846 PE), fluorescein (sc-18846 FITC), Alexa Fluor® 488 (sc-18846 AF488), Alexa Fluor® 546 (sc-18846 AF546), Alexa Fluor® 594 (sc-18846 AF594) or Alexa Fluor® 647 (sc-18846 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-18846 AF680) or Alexa Fluor® 790 (sc-18846 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

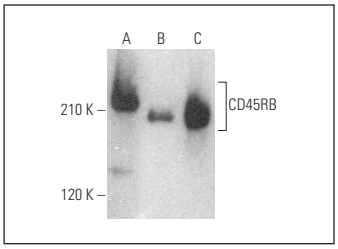
CD45RB (16A) is recommended for detection of CD45RB of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

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

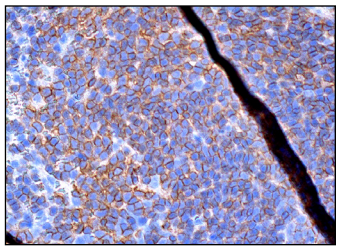
Molecular Weight of CD45RB: 180-220 kDa.

Positive Controls: CTLL-2 cell lysate: sc-2242, RAW 264.7 whole cell lysate: sc-2211 or mouse thymus extract: sc-2406.

DATA



CD45RB (16A): sc-18846. Western blot analysis of CD45RB expression in mouse thymus tissue extract (**A**) and RAW 264.7 (**B**) and CTLL-2 (**C**) whole cell lysates.



CD45RB (16A): sc-18846. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse spleen tissue showing membrane staining of cells in white pulp and cells in red pulp.

SELECT PRODUCT CITATIONS

1. Cohen, C., et al. 2020. Latent/quiescent herpes simplex virus 1 genome detection by fluorescence *in situ* hybridization (FISH). Methods Mol. Biol. 2060: 185-197.
2. Sawtell, N.M., et al. 2020. HSV mutant generation and dual detection methods for gaining insight into latent/lytic cycles *in vivo*. Methods Mol. Biol. 2060: 219-239.

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.