

CD45RB (MEM-55): sc-51555

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. McMichael A.J., et al., eds. 1987. *Leucocyte Typing III*. Oxford: Oxford University Press.
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: 1548-1566.
4. Thomas, M.L., et al. 1989. The leukocyte common antigen family. *Annu. Rev. Immunol.* 7: 7339-7369.
5. Birkeland, M.L., et al. 1989. Epitopes on CD45R [T200] molecules define differentiation antigens on murine B and T lymphocytes. *J. Mol. Cell. Immunol.* 4: 71-85.
6. 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.
7. Bazil, V., et al. 1989. Sialic acid-dependent epitopes of CD45 molecules of restricted cellular expression. *Immunogenetics* 29: 202-205.
8. Johnson, P., et al. 1989. Identification of the alternatively spliced exons of murine CD45 (T200) required for reactivity with B220 and other T200-restricted antibodies. *J. Exp. Med.* 169: 1179-1184.
9. Hathcock, K.S., et al. 1992. Expression of variable exon A-, B-, and C-specific CD45 determinants on peripheral and thymic T cell populations. *J. Immunol.* 148: 19-28.

CHROMOSOMAL LOCATION

Genetic locus: PTPRC (human) mapping to 1q31.3.

SOURCE

CD45RB (MEM-55) is a mouse monoclonal antibody raised against thymocytes and T lymphocytes of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

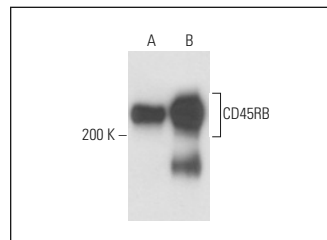
CD45RB (MEM-55) is recommended for detection of a sialidase-sensitive epitope of CD45RB of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 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 shRNA Plasmid (h): sc-29251-SH and CD45 shRNA (h) Lentiviral Particles: sc-29251-V.

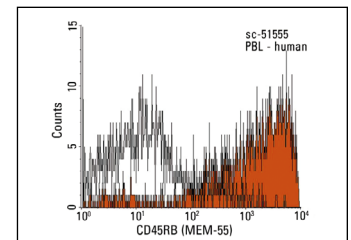
Molecular Weight of CD45RB: 180-220 kDa.

Positive Controls: Ramos cell lysate: sc-2216, U-698-M whole cell lysate: sc-364799 or GA-10 whole cell lysate: sc-364230.

DATA



CD45RB (MEM-55): sc-51555. Western blot analysis of CD45RB expression in U-698-M (A) and GA-10 (B) whole cell lysates.



CD45RB (MEM-55): sc-51555. Indirect FCM analysis of human peripheral blood leukocytes stained with CD45RB (MEM-55), followed by PE-conjugated goat anti-mouse IgG₁: sc-3764. Black line histogram represents the isotype control, normal mouse IgG₁: sc-3877.

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.