

# CD45RA (4KB5): sc-20057

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

CD45RA (4KB5) is a mouse monoclonal antibody raised against human hairy cell leukaemia cells.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD45RA (4KB5) is available conjugated to either phycoerythrin (sc-20057 PE) or fluorescein (sc-20057 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

In addition, CD45RA (4KB5) is available conjugated to APC-Cy7 (sc-20057 APCC7), 100 tests in 2 ml, for IF, IHC(P) and FCM.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

CD45RA (4KB5) is recommended for detection of CD45RA 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 10<sup>6</sup> 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.

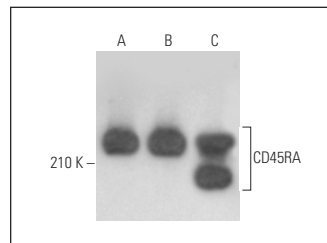
Molecular Weight of CD45RA: 180-220 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, U-937 cell lysate: sc-2239 or Ramos cell lysate: sc-2216.

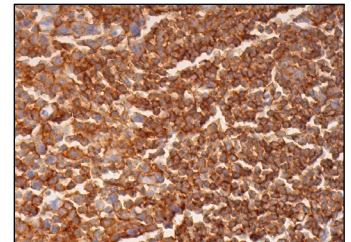
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



CD45RA (4KB5): sc-20057. Western blot analysis of CD45RA expression in Raji (A), Ramos (B) and U-937 (C) whole cell lysates.



CD45RA (4KB5): sc-20057. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing membrane and cytoplasmic staining of cells in germinal centers and cells in non-germinal centers.

## SELECT PRODUCT CITATIONS

- Li, F.J., et al. 2005. A rapid translocation of CD45RO but not CD45RA to lipid rafts in IL-6-induced proliferation in myeloma. *Blood* 105: 3295-3392.
- Frezzato, F., et al. 2016. Profiling B cell chronic lymphocytic leukemia by reverse phase protein array: focus on apoptotic proteins. *J. Leukoc. Biol.* 100: 1061-1070.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.