

# CD45R (RA3-6B2): sc-19597

## 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; Ptprc (mouse) mapping to 1 E4.

## SOURCE

CD45R (RA3-6B2) is a rat monoclonal antibody raised against an extracellular domain of CD45 that is dependent on the expression of exon A and specific carbohydrate residues.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Also available azide-free for modulation of B-cell responses *in vitro* and *in vivo*, sc-19597 L, 200 µg/0.1 ml.

CD45R (RA3-6B2) is available conjugated to agarose (sc-19597 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-19597 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-19597 PE), fluorescein (sc-19597 FITC), Alexa Fluor® 488 (sc-19597 AF488), Alexa Fluor® 546 (sc-19597 AF546), Alexa Fluor® 594 (sc-19597 AF594) or Alexa Fluor® 647 (sc-19597 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-19597 AF680) or Alexa Fluor® 790 (sc-19597 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, CD45R (RA3-6B2) is available conjugated to APC-Cy7 (sc-19597 APCC7), 100 tests in 2 ml, for IF, IHC(P) and FCM.

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## 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.

## APPLICATIONS

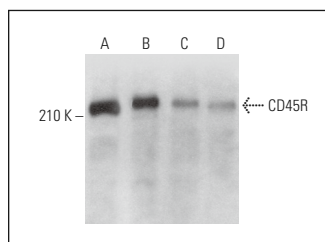
CD45R (RA3-6B2) is recommended for detection of CD45R of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 10<sup>6</sup> 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.

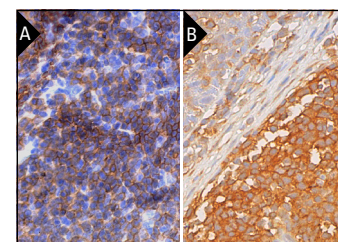
Molecular Weight of CD45R: 240 kDa.

Positive Controls: TK-1 whole cell lysate: sc-364798, U-698-M whole cell lysate: sc-364799 or BYDP whole cell lysate: sc-364368.

## DATA



CD45R (RA3-6B2): sc-19597. Western blot analysis of CD45R expression in TK-1 (A), U-698-M (B), GA-10 (C) and BYDP (D) whole cell lysates.



CD45R (RA3-6B2): sc-19597. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse spleen tissue showing membrane staining of cells in white pulp (A). CD45R (RA3-6B2) HRP: sc-19597 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing membrane and cytoplasmic staining of cells in germinal center. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (B).

## SELECT PRODUCT CITATIONS

- Lang, H., et al. 2006. Contribution of bone marrow hematopoietic stem cells to adult mouse inner ear: mesenchymal cells and fibrocytes. *J. Comp. Neurol.* 496: 187-201.
- Zhao, L., et al. 2017. Phosphatidylinositol transfer protein- $\alpha$  in platelets is inconsequential for thrombosis yet is utilized for tumor metastasis. *Nat. Commun.* 8: 1216.
- Wang, X., et al. 2021. Troxerutin improves dextran sulfate sodium-induced ulcerative colitis in mice. *J. Agric. Food Chem.* 69: 2729-2744.
- Mauduit, O., et al. 2022. Spatial transcriptomics of the lacrimal gland features macrophage activity and epithelium metabolism as key alterations during chronic inflammation. *Front. Immunol.* 13: 1011125.

## RESEARCH USE

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