

# CD45 (OX1): sc-53045



The Power to Question

## BACKGROUND

CD45 has been identified as a transmembrane glycoprotein, broadly expressed among hematopoietic cells. Multiple isoforms of CD45 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 CD45, while the intracellular domain is conserved. CD45 functions as a phosphotyrosine phosphatase, a vital component for efficient tyrosine phosphorylation induction by the TCR/CD3 complex. The tyrosine phosphatase activity of CD45 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 CD45.

## CHROMOSOMAL LOCATION

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

## SOURCE

CD45 (OX1) is a mouse monoclonal antibody raised against full length thymocyte membrane glycoproteins of rat origin.

## 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.

CD45 (OX1) is available conjugated to either phycoerythrin (sc-53045 PE) or fluorescein (sc-53045 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

## APPLICATIONS

CD45 (OX1) is recommended for detection of monomorphic determinant of CD45 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), flow cytometry (1 µg per 1 x 10<sup>6</sup> cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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 CD45: 180-220 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, BJAB whole cell lysate: sc-2207 or CCRF-CEM cell lysate: sc-2225.

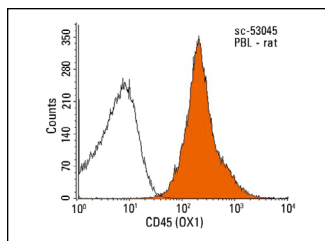
## STORAGE

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.

## DATA



CD45 (OX1): sc-53045. Indirect FCM analysis of rat peripheral blood leukocytes stained with CD45 (OX1), followed by PE-conjugated goat anti-mouse IgG: sc-3738. Black line histogram represents the isotype control, normal mouse IgG<sub>1</sub>: sc-3877.

## SELECT PRODUCT CITATIONS

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- Peng, C., et al. 2018. Response of hPDLSCs on 3D printed PCL/PLGA composite scaffolds *in vitro*. *Mol. Med. Rep.* 18: 1335-1344.
- Fujita, N., et al. 2018. Oxygen therapy may worsen the survival rate in rats with monocrotaline-induced pulmonary arterial hypertension. *PLoS ONE* 13: e0204254.
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## PROTOCOLS

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