

# CD45 (30-F11): sc-53665

## 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 (mouse) mapping to 1 E4.

## SOURCE

CD45 (30-F11) is a rat monoclonal antibody raised against thymus and spleen of mouse origin.

## PRODUCT

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

CD45 (30-F11) is available conjugated to agarose (sc-53665 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53665 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53665 PE), fluorescein (sc-53665 FITC), Alexa Fluor® 488 (sc-53665 AF488), Alexa Fluor® 546 (sc-53665 AF546), Alexa Fluor® 594 (sc-53665 AF594) or Alexa Fluor® 647 (sc-53665 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53665 AF680) or Alexa Fluor® 790 (sc-53665 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

CD45 (30-F11) is recommended for detection of CD45 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<sup>6</sup> 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.

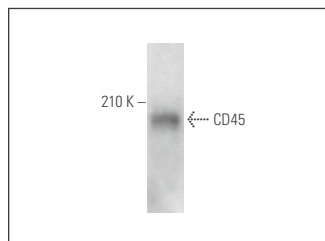
Molecular Weight of CD45: 180-220 kDa.

Positive Controls: WEHI-231 whole cell lysate: sc-2213, BYDP whole cell lysate: sc-364368 or mouse thymus extract: sc-2406.

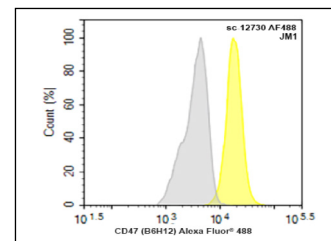
## STORAGE

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

## DATA



CD45 (30-F11): sc-53665. Western blot analysis of CD45 expression in mouse thymus tissue extract.



CD45 (30-F11) Alexa Fluor® 488: sc-53665 AF488. FCM analysis of TK-1 cells. Gray histogram represents the isotype control, normal rat IgG<sub>2b</sub>: sc-3897.

## SELECT PRODUCT CITATIONS

- Bernichtein, S., et al. 2015. High milk consumption does not affect prostate tumor progression in two mouse models of benign and neoplastic lesions. *PLoS ONE* 10: e0125423.
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- Girousse, A., et al. 2019. The release of adipose stromal cells from subcutaneous adipose tissue regulates ectopic intramuscular adipocyte deposition. *Cell Rep.* 27: 323-333.
- Kikuchi, A., et al. 2020. Hepatic stellate cell-specific platelet-derived growth factor receptor  $\alpha$  loss reduces fibrosis and promotes repair following hepatocellular injury. *Am. J. Pathol.* 190: 2080-2094.
- Kimishima, Y., et al. 2021. Clonal hematopoiesis with JAK2V617F promotes pulmonary hypertension with ALK1 upregulation in lung neutrophils. *Nat. Commun.* 12: 6177.
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- Lee, J.W., et al. 2023. SOX17-mediated LPAR4 expression plays a pivotal role in cardiac development and regeneration after myocardial infarction. *Exp. Mol. Med.* 55: 1424-1436.
- Hajjabadi, S., et al. 2023. Immunotherapy with STING and TLR9 agonists promotes synergistic therapeutic efficacy with suppressed cancer-associated fibroblasts in colon carcinoma. *Front. Immunol.* 14: 1258691.

## RESEARCH USE

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

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