

CD45 (T29/33): sc-18901

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.

SOURCE

CD45 (T29/33) is a mouse monoclonal antibody raised against the human cell line, CCRF-CEM.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD45 (T29/33) is available conjugated to either phycoerythrin (sc-18901 PE) or fluorescein (sc-18901 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

CD45 (T29/33) is recommended for detection of CD45 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 CD45: 180-220 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, CCRF-CEM cell lysate: sc-2225 or HL-60 whole cell lysate: sc-2209.

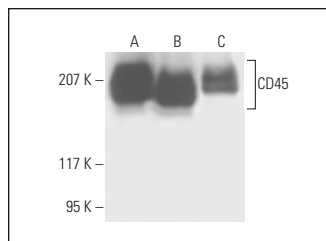
STORAGE

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

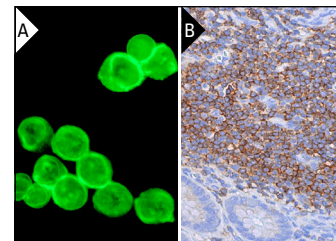
RESEARCH USE

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

DATA



CD45 (T29/33): sc-18901. Western blot analysis of CD45 expression in Jurkat (A), CCRF-CEM (B) and HL-60 (C) whole cell lysates.



CD45 (T29/33): sc-18901. Immunofluorescence staining of methanol-fixed Jurkat cells showing membrane staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing membrane staining of lymphoid cells (B).

SELECT PRODUCT CITATIONS

1. Flores-Borja, F., et al. 2007. Altered lipid raft-associated proximal signaling and translocation of CD45 tyrosine phosphatase in B lymphocytes from patients with systemic lupus erythematosus. *Arthritis Rheum.* 56: 291-302.
2. Moradi, I., et al. 2012. Application of anodized titanium for enhanced recruitment of endothelial progenitor cells. *Nanoscale Res. Lett.* 7: 298.
3. Granados-Principal, S., et al. 2012. Squalene ameliorates atherosclerotic lesions through the reduction of CD36 scavenger receptor expression in macrophages. *Mol. Nutr. Food Res.* 56: 733-740.
4. Park, J.S., et al. 2018. Verification of long-term genetic stability of hMSCs during subculture after internalization of sunflower-type nanoparticles (SF-NPs). *Theranostics* 8: 5548-5561.
5. Chalishazar, M.D., et al. 2019. Myc-driven small-cell lung cancer is metabolically distinct and vulnerable to arginine depletion. *Clin. Cancer Res.* 25: 5107-5121.
6. Harman, R.M., et al. 2022. Mesenchymal stromal cells isolated from chicken peripheral blood secrete bioactive factors with antimicrobial and regenerative properties. *Front. Vet. Sci.* 9: 949836.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.



See **CD45 (35-Z6): sc-1178** for CD45 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.