

CD45 (N-19): sc-1123

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.

REFERENCES

1. Trowbridge, I.S. 1978. Interspecies spleen-myeloma hybrid producing monoclonal antibodies against mouse lymphocyte surface glycoprotein, T200. *J. Exp. Med.* 148: 313-323.
2. West, K.P., et al. 1986. The demonstration of B cell, T cell and myeloid antigens in paraffin sections. *J. Pathol.* 150: 89-101.

CHROMOSOMAL LOCATION

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

SOURCE

CD45 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of CD45 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-1123 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CD45 (N-19) 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) 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 shRNA Plasmid (h): sc-29251-SH and CD45 shRNA (h) Lentiviral Particles: sc-29251-V.

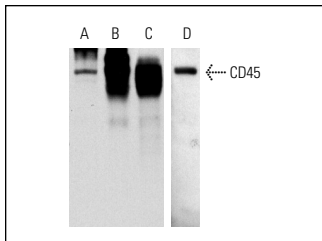
Molecular Weight of CD45: 180-220 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, BJAB whole cell lysate: sc-2207 or HL-60 whole cell lysate: sc-2209.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Western blot analysis of CD45 expression in Jurkat (A,D), BJAB (B) and WEHI-231 (C) whole cell lysates. Antibodies tested include CD45 (35-Z6): sc-1178 (A-C) and CD45 (N-19): sc-1123 (D).

SELECT PRODUCT CITATIONS

1. Gorska, M.M., et al. 2004. Unc119, a novel activator of Lck/Fyn, is essential for T cell activation. *J. Exp. Med.* 199: 369-379.
2. Capsoni, S., et al. 2012. Intranasal "painless" human nerve growth factors slows amyloid neurodegeneration and prevents memory deficits in App X PS1 mice. *PLoS ONE* 7: e37555.
3. Capsoni, S., et al. 2012. Pathogen free conditions slow the onset of neurodegeneration in a mouse model of nerve growth factor deprivation. *J. Alzheimers Dis.* 31: 1-6.

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.



Try **CD45 (35-Z6): sc-1178**, our highly recommended monoclonal alternative to CD45 (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **CD45 (35-Z6): sc-1178**.