

CD45 (6A230): sc-70696

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; Ptprc (mouse) mapping to 1 E4.

SOURCE

CD45 (6A230) is a mouse monoclonal antibody raised against full length thymocyte membrane glycoproteins of rat origin.

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 (6A230) is available conjugated to either phycoerythrin (sc-70696 PE) or fluorescein (sc-70696 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

CD45 (6A230) 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 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of CD45: 180-220 kDa.

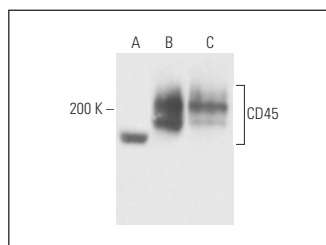
Positive Controls: HL-60 whole cell lysate: sc-2209, human platelet extract: sc-363773 or THP-1 cell lysate: sc-2238.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CD45 (6A230): sc-70696. Western blot analysis of CD45 expression in human platelet extract (A) and HL-60 (B) and THP-1 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lu, W., et al. 2015. Mesenchymal stem cells attenuate acute ischemia-reperfusion injury in a rat model. *Exp. Ther. Med.* 10: 2131-2137.
2. Komatsu, I., et al. 2016. The effect of tendon stem/progenitor cell (TSC) sheet on the early tendon healing in a rat Achilles tendon injury model. *Acta Biomater.* 42: 136-146.
3. Lu, W., et al. 2017. Transplantation of rat mesenchymal stem cells overexpressing hypoxia-inducible factor 2α improves blood perfusion and arteriogenesis in a rat hindlimb ischemia model. *Stem Cells Int.* 2017: 3794817.

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.

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.