

CD45 (B-8): sc-28369

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 (B-8) is a mouse monoclonal antibody raised against amino acids 1075-1304 of CD45 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD45 (B-8) is available conjugated to agarose (sc-28369 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28369 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28369 PE), fluorescein (sc-28369 FITC), Alexa Fluor[®] 488 (sc-28369 AF488), Alexa Fluor[®] 546 (sc-28369 AF546), Alexa Fluor[®] 594 (sc-28369 AF594) or Alexa Fluor[®] 647 (sc-28369 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-28369 AF680) or Alexa Fluor[®] 790 (sc-28369 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CD45 (B-8) is recommended for detection of CD45 of human origin by Western Blotting (starting dilution 1:100, dilution range), 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 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.

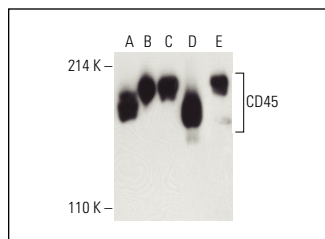
Molecular Weight of CD45: 180-220 kDa.

Positive Controls: Ramos cell lysate: sc-2216, Jurkat whole cell lysate: sc-2204 or CCRF-CEM cell lysate: sc-2225.

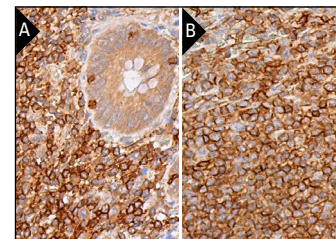
STORAGE

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

DATA



CD45 (B-8): sc-28369. Western blot analysis of CD45 expression in Jurkat (A), GA-10 (B), Ramos (C), CCRF-CEM (D) and NAMALWA (E) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



CD45 (B-8): sc-28369. Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing membrane and cytoplasmic staining of lymphoid cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing membrane and cytoplasmic staining of cells in white pulp and cells in red pulp (B).

SELECT PRODUCT CITATIONS

- Agarwal, K., et al. 2013. Inhibition of mucin-type O-glycosylation through metabolic processing and incorporation of N-thioglycolyl-D-galactosamine peracetate (Ac5GalNTGc). *J. Am. Chem. Soc.* 135: 14189-14197.
- Yang, J., et al. 2015. Heat shock protein 70 protects rat peritoneal mesothelial cells from advanced glycation end-products-induced epithelial-to-mesenchymal transition through mitogen-activated protein kinases/extracellular signal-regulated kinases and transforming growth factor-β/Smad pathways. *Mol. Med. Rep.* 11: 4473-4481.
- Tomasello, L., et al. 2016. Donor age and long-term culture do not negatively influence the stem potential of limbal fibroblast-like stem cells. *Stem Cell Res. Ther.* 7: 83.
- Tomasello, L., et al. 2017. Mesenchymal stem cells derived from inflamed dental pulpal and gingival tissue: a potential application for bone formation. *Stem Cell Res. Ther.* 8: 179.
- Qin, W., et al. 2018. Novel calcium phosphate cement with metformin-loaded chitosan for odontogenic differentiation of human dental pulp cells. *Stem Cells Int.* 2018: 7173481.
- Liu, J., et al. 2019. Stem cells in the periodontal ligament differentiated into osteogenic, fibrogenic and cementogenic lineages for the regeneration of the periodontal complex. *J. Dent.* 92: 103259.
- Singh, S., et al. 2020. Molecular characterization of WDR13 knockout female mice uteri: a model for human endometrial hyperplasia. *Sci. Rep.* 10: 14621.

RESEARCH USE

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

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