SANTA CRUZ BIOTECHNOLOGY, INC.

CD45 (2B11): sc-20056

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (2B11) is a mouse monoclonal antibody raised against isolated neoplastic cells from a T cell lymphoma.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD45 (2B11) is available conjugated to either phycoerythrin (sc-20056 PE) or fluorescein (sc-20056 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

STORAGE

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

APPLICATIONS

CD45 (2B11) 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 10^6 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.

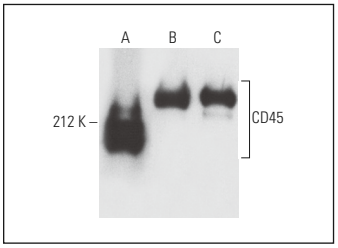
Molecular Weight of CD45: 180-220 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, GA-10 whole cell lysate: sc-364230 or Ramos cell lysate: sc-2216.

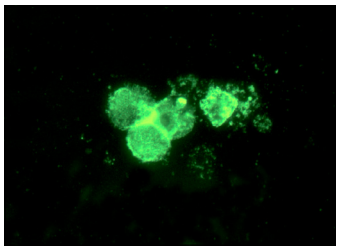
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CD45 (2B11): sc-20056. Western blot analysis of CD45 expression in CCRF-CEM (**A**), GA-10 (**B**) and Ramos (**C**) whole cell lysate.



CD45 (2B11): sc-20056. Immunofluorescence staining of methanol-fixed GA-10 cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Wertheimer, C., et al. 2017. A cell culture technique for human epiretinal membranes to describe cell behavior and membrane contraction *in vitro*. Graefes Arch. Clin. Exp. Ophthalmol. 255: 2147-2155.
2. Vogt, D., et al. 2018. Premacular membranes in tissue culture. Graefes Arch. Clin. Exp. Ophthalmol. 256: 1589-1597.
3. Liang, Y., et al. 2018. Chondrogenic differentiation of synovial fluid mesenchymal stem cells on human meniscus-derived decellularized matrix requires exogenous growth factors. Acta Biomater. 80: 131-143.
4. Hagenau, F., et al. 2019. Vitrectomy for diabetic macular edema: optical coherence tomography criteria and pathology of the vitreomacular interface. Am. J. Ophthalmol. 200: 34-46.
5. Schumann, R.G., et al. 2019. Premacular cell proliferation profiles in tangential traction vitreo-maculopathies suggest a key role for hyalocytes. Ophthalmologica 242: 106-112.

RESEARCH USE

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

CONJUGATES

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.