SANTA CRUZ BIOTECHNOLOGY, INC.

CD2 (Huly-m1): sc-7318

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The Power to Question

BACKGROUND

CD2 (also designated E-rosette receptor) interacts through its amino-terminal domain with the extracellular domain of CD58 (also designated CD2 ligand) to mediate cell adhesion. CD2/CD58 binding can enhance antigen-specific T cell activation. CD2 is a transmembrane glycoprotein that is expressed on peripheral blood T lymphocytes, NK cells and thymocytes, as well as on mouse B cells and rat splenic macrophages. CD58 is a heavily glycosylated protein with a broad tissue distribution in hematopoietic and other cells, including endothelium. Interaction between CD2 and its counterreceptor LFA3 (CD58) on opposing cells optimizes immune system recognition, thereby facilitating communication between helper T lymphocytes and antigen-presenting cells, as well as between cytolytic effectors and target cells.

REFERENCES

1. Shaw, A.S., et al. 1997. Making the T cell receptor go the distance: a topological view of T cell activation. Immunity 6: 361-369.
2. Dustin, M.L., et al. 1998. A novel adaptor protein orchestrates receptor patterning and cytoskeletal polarity in T cell contacts. Cell 94: 667-677.
3. Nishizawa, K., et al. 1998. Identification of a proline-binding motif regulating CD2-triggered T lymphocyte activation. Proc. Natl. Acad. Sci. USA 95: 14897-14902.
4. Shih, N.Y., et al. 1999. Congenital nephrotic syndrome in mice lacking CD2-associated protein. Science 286: 312-315.
5. Guan, F., et al. 2006. Autocrine VEGF-A system in podocytes regulates podocin and its interaction with CD2AP. Am. J. Physiol. Renal Physiol. 291: F422-F428.
6. Fan, Q., et al. 2006. The relationship among nephrin, podocin, CD2AP and α-actinin might not be a true "interaction" in podocyte. Kidney Int. 69: 1207-1215.
7. Xia, W., et al. 2006. Differential interactions between transforming growth factor β3/β R1, TAB1 and CD2AP disrupt blood-testis barrier and Sertoli-germ cell adhesion. J. Biol. Chem. 281: 16799-16813.
8. Konishi, H., et al. 2006. CFBP is a novel tyrosine-phosphorylated protein that might function as a regulator of CIN85/CD2AP. J. Biol. Chem. 281: 28919-28931.
9. Tossidou, I., et al. 2007. CD2AP/CIN85 balance determines receptor tyrosine kinase signaling response in podocytes. J. Biol. Chem. 282: 7457-7464.

CHROMOSOMAL LOCATION

Genetic locus: CD2 (human) mapping to 1p13.1.

SOURCE

CD2 (Huly-m1) is a mouse monoclonal antibody raised against pooled donor human thymocytes.

STORAGE

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

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.

CD2 (Huly-m1) is available conjugated to agarose (sc-7318 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; and to either phycoerythrin (sc-7318 PE) or fluorescein (sc-7318 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

APPLICATIONS

CD2 (Huly-m1) is recommended for detection of CD2 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)] and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for CD2 siRNA (h): sc-29970, CD2 shRNA Plasmid (h): sc-29970-SH and CD2 shRNA (h) Lentiviral Particles: sc-29970-V.

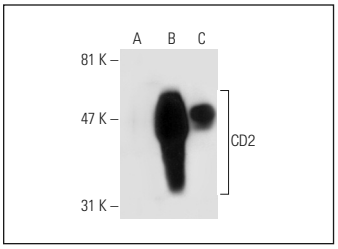
Molecular Weight of CD2: 50 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MCF7 whole cell lysate: sc-2206 or CD2 (h): 293T Lysate: sc-114105.

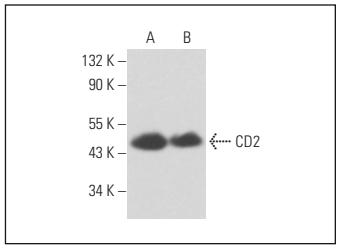
RECOMMENDED SUPPORT REAGENTS

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).

DATA



CD2 (Huly-m1): sc-7318. Western blot analysis of CD2 expression in non-transfected 293T: sc-117752 (**A**), human CD2 transfected 293T: sc-114105 (**B**) and Jurkat (**C**) whole cell lysates.



CD2 (Huly-m1): sc-7318. Western blot analysis of CD2 expression in Jurkat (**A**) and MCF7 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Llanes-Fernández, L., et al. 2009. Association between the expression of IL-10 and T cell activation proteins loss in early breast cancer patients. J. Cancer Res. Clin. Oncol. 135: 255-264.

RESEARCH USE

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