SANTA CRUZ BIOTECHNOLOGY, INC.

DC-SIGN (1B10): sc-23926

The Power to Question

BACKGROUND

Dendritic cells (DCs) are antigen-presenting immune system cells that are present on peripheral mucosal tissues and migrate to lymphoid tissues. DC-SIGN (DC-specific ICAM-3 grabbing non-integrin) is a type II membrane protein that is exclusively expressed by DCs. DC-SIGN, also designated CD209, binds to ICAM-3 to mediate the initial interaction between DCs and resting T cells through the immunological synapse. The DCs that are present in the initial sites of HIV-1 infection capture HIV-1 through DC-SIGN, which then facilitates the migration of DCs to areas of T cell-rich secondary lymphoid organs, where it promotes efficient *trans*-HIV-1 infection of those T cells. DC-SIGN functions to transport HIV-1 from exposed mucosal surfaces to a lymphoid compartment.

REFERENCES

1. Curtis, B.M., et al. 1992. Sequence and expression of a membrane-associated C-type lectin that exhibits its CD2-independent binding of human immunodeficiency virus envelope glycoprotein gp120. Proc. Natl. Acad. Sci. USA 89: 8356-8360.
2. Steinman, R.M. 2000. DC-SIGN: a guide to some mysteries of dendritic cells. Cell 100: 491-494.
3. Geijtenbeek, T.B., et al. 2000. Identification of DC-SIGN, a novel dendritic cell-specific ICAM-3 receptor that supports primary immune responses. Cell 100: 575-585.
4. Geijtenbeek, T.B., et al. 2000. DC-SIGN, a dendritic cell-specific HIV-1-binding protein that enhances *trans*-infection of T cells. Cell 100: 587-597.
5. Cohen, J. 2000. AIDS research. Novel protein delivers HIV to target cells. Science 287: 1567.
6. Steinberg, D. 2000. Receptor boosts HIV infection. The Scientist 14: 12.
7. Whelan, K.T., et al. 2003. The HIV protease inhibitor indinavir reduces immature dendritic cell transendothelial migration. Eur. J. Immunol. 33: 2520-2530.

CHROMOSOMAL LOCATION

Genetic locus: CD209 (human) mapping to 19p13.2.

SOURCE

DC-SIGN (1B10) is a mouse monoclonal antibody raised against human DC-SIGN.

PRODUCT

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

DC-SIGN (1B10) is available conjugated to either phycoerythrin (sc-23926 PE) or fluorescein (sc-23926 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

DC-SIGN (1B10) is recommended for detection of DC-SIGN of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 DC-SIGN siRNA (h): sc-43719, DC-SIGN shRNA Plasmid (h): sc-43719-SH and DC-SIGN shRNA (h) Lentiviral Particles: sc-43719-V.

Molecular Weight of DC-SIGN: 44 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or human uterus extract: sc-363784.

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

SELECT PRODUCT CITATIONS

1. Tailleux, L., et al. 2003. DC-SIGN is the major *Mycobacterium tuberculosis* receptor on human dendritic cells. J. Exp. Med. 197: 121-127.
2. Necchi, V., et al. 2009. Evidence for *trans*-epithelial dendritic cells in human *H. pylori* active gastritis. Helicobacter 14: 208-222.
3. Obermajer, N., et al. 2010. An assay for functional dendritic cell-specific ICAM-3-grabbing nonintegrin (DC-SIGN) inhibitors of human dendritic cell adhesion. Anal. Biochem. 406: 222-229.
4. Svajger, U., et al. 2011. DC-SIGN ligation greatly affects dendritic cell differentiation from monocytes compromising their normal function. J. Leukoc. Biol. 89: 893-905.
5. Jin, W., et al. 2014. DC-SIGN plays a stronger role than DCIR in mediating HIV-1 capture and transfer. Virology 458-459: 83-92.
6. Rogers, K.J., et al. 2019. IL-4/IL-13 polarization of macrophages enhances Ebola virus glycoprotein-dependent infection. PLoS Negl. Trop. Dis. 13: e0007819.
7. Hueso, M., et al. 2021. *In vivo* CD40 silencing by siRNA infusion in rodents and evaluation by kidney immunostaining. Bio Protoc. 11: e4032.

RESEARCH USE

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