SANTA CRUZ BIOTECHNOLOGY, INC.

CD16 (LNK16): sc-51524

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

CD16, the low affinity Fcγ receptor III (Fcγ RIII) for IgG, exists both as a polypeptide-anchored form known as Fcγ RIIIA or CD16-A in human natural killer cells and macrophages and as a glycosylphosphatidylinositol-anchored form (Fcγ RIIIB or CD16-B) in neutrophils. CD16-A requires association of the γ subunit of Fcε RI or the ζ subunit of the TCR-CD3 complex for cell surface expression. CD16-B is polymorphic; the two alleles are designated NA1 and NA2. CD16 is one of only four eukaryotic receptors known to exist natively in both the transmembrane (TM) isoform (CD16-A) and glycosylphosphatidylinositol (GPI) isoform (CD16-B). Patients with paroxysmal nocturnal hemoglobinuria (PNH) have only about 10% of the normal levels of CD16 on their neutrophils, whereas the expression of FcRII is unaffected. Analysis of FcRIII expression in cells of PNH patients, known to be deficient in PI-linked proteins, suggests FcRIII is not PI-linked in monocytes.

REFERENCES

1. Fleit, H.B., et al. 1982. Human neutrophil Fc γ receptor distribution and structure. Proc. Natl. Acad. Sci. USA 79: 3275-3279.
2. Perussia, B., et al. 1984. The Fc receptor for IgG on human natural killer cells: phenotypic, functional and comparative studies with monoclonal antibodies. J. Immunol. 133: 180-189.
3. Huizinga, T.W., et al. 1988. The PI-linked receptor FcRIII is released on stimulation of neutrophils. Nature 333: 667-669.
4. Nagarajan, S., et al. 1995. Ligand binding and phagocytosis by CD16 (Fc γ receptor III) isoforms. Phagocytic signaling by associated ζ and γ subunits in Chinese hamster ovary cells. J. Biol. Chem. 270: 25762-25770.
5. de Haas, M., et al. 1996. A triallelic Fc γ receptor type IIIA polymorphism influences the binding of human IgG by NK cell Fc γ RIIIa. J. Immunol. 156: 3948-3955.
6. Tamm, A. and Schmidt R. 1996. The binding epitopes of human CD16 (Fc γ RIII) monoclonal antibodies. Implications for ligand binding. J. Immunol. 157: 1576-1581.
7. Chesla, S.E., et al. 2000. The membrane anchor influences ligand binding two-dimensional kinetic rates and three-dimensional affinity of FcγRIII (CD16). J. Biol. Chem. 275: 10235-10246.

CHROMOSOMAL LOCATION

Genetic locus: FCGR3A/FCGR3B (human) mapping to 1q23.3.

SOURCE

CD16 (LNK16) is a mouse monoclonal antibody raised against normal peripheral blood granulocytes of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD16 (LNK16) is available conjugated either phycoerythrin (sc-51524 PE, 100 tests in 2 ml) or fluorescein (sc-51524 FITC, 100 tests in 2 ml), for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

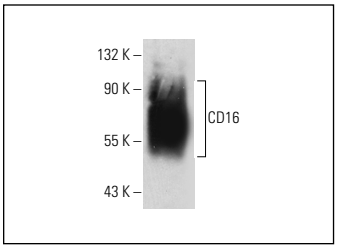
CD16 (LNK16) is recommended for detection of CD16-A and CD16-B of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for CD16 siRNA (h): sc-42758, CD16 shRNA Plasmid (h): sc-42758-SH and CD16 shRNA (h) Lentiviral Particles: sc-42758-V.

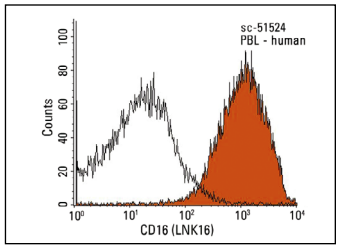
Molecular Weight of CD16: 50-100 kDa.

Positive Controls: human PBL whole cell lysate, NK-92 whole cell lysate: sc-364788 or human platelet extract: sc-363773.

DATA



CD16 (LNK16): sc-51524. Western blot analysis of CD16 expression in human PBL whole cell lysate.



CD16 (LNK16): sc-51524. Indirect FCM analysis of human peripheral blood leukocytes stained with CD16 (LNK16), followed by PE-conjugated goat anti-mouse IgG_1: sc-3764. Black line histogram represents the isotype control, normal mouse IgG_1: sc-3877.

SELECT PRODUCT CITATIONS

1. Werth, S., et al. 2013. Rapid enzyme-linked immunosorbent assay for the detection of antibodies against human neutrophil antigens -1a, -1b, and -1c. Transfusion 53: 193-201.
2. Simtong, P., et al. 2018. Improvement of monoclonal antibody-immobilized granulocyte antigen assay for the detection of anti-HNA-1 alloantibodies. Transfusion 58: 200-207.
3. Sachs, U.J., et al. 2020. Primary structure of human neutrophil antigens 1a and 1b. Transfusion 60: 815-821.

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.

CONJUGATES

See **CD16 (DJ130c): sc-20052** for CD16 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.