

CD16 (GRM1): sc-19594

BACKGROUND

CD16, the low affinity Fc γ receptor III for IgG (Fc γ RIII), exists both as a polypeptide-anchored form (Fc γ RIIIA or CD16-A) in human natural killer cells and macrophages and as a glycosylphosphatidylinositol-anchored form (Fc γ RIIIB or CD16-B) in neutrophils. CD16-A requires association of the γ subunit of Fc ϵ RI or the ζ subunit of the TCR-CD3 complex for cell surface expression. CD16-B is polymorphic; the two alleles are termed NA1 and NA2. CD16 is one of only four eukaryotic receptors known to exist natively in both the transmembrane (TM, CD16-A) and glycosylphosphatidylinositol (GPI, CD16-B) isoforms. Patients with paroxysmal nocturnal hemoglobinuria (PNH) have only about 10% of the normal levels of CD16 on their neutrophils, whereas the expression of FcRIII 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.

CHROMOSOMAL LOCATION

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

SOURCE

CD16 (GRM1) is a mouse monoclonal antibody raised against human prolymphocytic leukemia.

PRODUCT

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

CD16 (GRM1) is available conjugated to agarose (sc-19594 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-19594 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-19594 PE), fluorescein (sc-19594 FITC), Alexa Fluor® 488 (sc-19594 AF488), Alexa Fluor® 546 (sc-19594 AF546), Alexa Fluor® 594 (sc-19594 AF594) or Alexa Fluor® 647 (sc-19594 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-19594 AF680) or Alexa Fluor® 790 (sc-19594 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

CD16 (GRM1) is recommended for detection of CD16 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 μ g per 1 x 10⁶ 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.

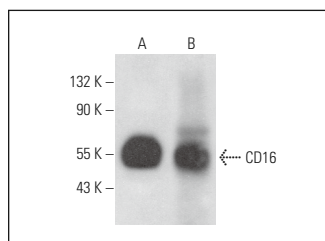
Positive Controls: JM1 whole cell lysate: sc-364233, NK-92 whole cell lysate: 364788 or human spleen extract: sc-363779.

RECOMMENDED SUPPORT REAGENTS

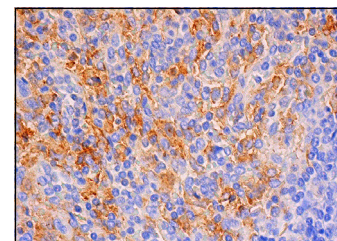
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CD16 (GRM1): sc-19594. Western blot analysis of CD16 expression in JM1 whole cell lysate (A) and human spleen tissue extract (B).



CD16 (GRM1): sc-19594. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing membrane and cytoplasmic staining of cells in white pulp.

SELECT PRODUCT CITATIONS

1. Golay, J., et al. 2019. Human neutrophils express low levels of Fc γ RIIIA, which plays a role in PMN activation. *Blood* 133: 1395-1405.

STORAGE

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