

# CD16 (YFC 120.5): sc-58962

## BACKGROUND

CD16, the low affinity Fc $\gamma$  receptor III (Fc $\gamma$  RIII) for IgG, exists both as a polypeptide-anchored form known as Fc $\gamma$  RIIIA or CD16-A in human natural killer cells and macrophages and as a glycosylphosphatidylinositol-anchored form (Fc $\gamma$  RIIIB or CD16-B) in neutrophils. CD16-A requires association of the  $\gamma$  subunit of Fc $\epsilon$  RI or the  $\zeta$  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 haemoglobinuria (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  $\gamma$  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  $\gamma$  receptor III) isoforms. Phagocytic signaling by associated  $\zeta$  and  $\gamma$  subunits in Chinese hamster ovary cells. J. Biol. Chem. 270: 25762-25770.
5. de Haas, M., et al. 1996. A triallelic Fc  $\gamma$  receptor type IIIA polymorphism influences the binding of human IgG by NK cell Fc  $\gamma$  RIIIA. J. Immunol. 156: 3948-3955.

## CHROMOSOMAL LOCATION

Genetic locus: FCGR3A/FCGR3B (human) mapping to 1q23.3; Klr1c (mouse) mapping to 6 F3.

## SOURCE

CD16 (YFC 120.5) is a rat monoclonal antibody raised against neutrophils of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD16 (YFC 120.5) is available conjugated to either phycoerythrin (sc-58962 PE) or fluorescein (sc-58962 FITC) or Alexa Fluor<sup>®</sup> 594 (sc-58962 AF594), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM.

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## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

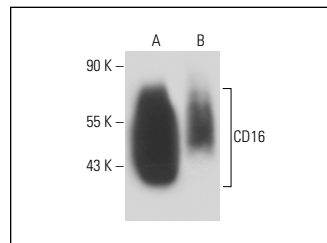
CD16 (YFC 120.5) is recommended for detection of CD16-A and CD16-B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

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

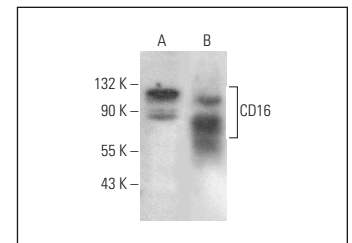
Molecular Weight of CD16: 50-100 kDa.

Positive Controls: CCRF-HSB-2 cell lysate: sc-2265, JAR cell lysate: sc-2276 or human platelet extract: sc-363773.

## DATA



CD16 (YFC 120.5): sc-58962. Western blot analysis of CD16 expression in human PBL (A,B) whole cell lysates under reducing (B) and non-reducing (A) conditions.



CD16 (YFC 120.5): sc-58962. Western blot analysis of CD16 expression in CCRF-HSB-2 (A) and JAR (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Liu, B., et al. 2020. HIPK3 mediates inflammatory cytokines and oxidative stress markers in monocytes in a rat model of sepsis through the JNK/c-Jun signaling pathway. Inflammation 43: 1127-1142.
2. Xiao, J., et al. 2021. Activation of GPR40 attenuates neuroinflammation and improves neurological function via PAK4/CREB/KDM6B pathway in an experimental GMH rat model. J. Neuroinflammation 18: 160.
3. Kwon, W., et al. 2021. Microglial phagocytosis of polystyrene microplastics results in immune alteration and apoptosis *in vitro* and *in vivo*. Sci. Total Environ. E-published.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.