

# Fc $\gamma$ RIIB/CD16-2 (2.4G2): sc-18867

## BACKGROUND

CD32 (designated Fc  $\gamma$  RIIB in mouse) is a low affinity receptor for the Fc fragment of aggregated IgG. CD32 is responsible for the clearance of immunocomplexes by macrophages and also plays an important role in the regulation of antibody production by B cells. IgG can noncooperatively bind either one or two highly glycosylated CD32 molecules, and this binding delivers a negative signal for B cells. CD32 exists as several isoforms that are produced by alternative splicing of three distinct genes, A, B, and C. These isoforms are designated Fc  $\gamma$  RIIBa, Fc  $\gamma$  RIIBb, Fc  $\gamma$  RIIB3, and Fc  $\gamma$  RIIBc. All isoforms are present on monocytes, placental trophoblasts and endothelial cells. In addition, the Fc $\gamma$ RIIB forms are present on B lymphocytes, and the Fc $\gamma$ RIIBa and Fc $\gamma$ RIIBc forms are found on neutrophils. CD16 (designated CD16-2 in mouse), the low affinity Fc  $\gamma$  receptor III for IgG (Fc  $\gamma$  RIIB), exists both as a polypeptide-anchored form (Fc  $\gamma$  RIIBa or CD16-A) in human natural killer cells and macrophages and as a glycosylphosphatidylinositol-anchored form (Fc $\gamma$ RIIBb 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 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.

## REFERENCES

1. Araujo-Jorge, T., et al. 1993. An Fc  $\gamma$  RIIB-, Fc  $\gamma$  RIIBc-specific monoclonal antibody (2.4G2) decreases acute *Trypanosoma cruzi* infection in mice. *Infect. Immun.* 61: 4925-4928.
2. Warmerdam, P.A., et al. 1993. Polymorphism of the human Fc  $\gamma$  RIIB (CD32): molecular basis and functional aspects. *Immunobiology* 185: 175-182.
3. Ho, A.S., et al. 1995. Functional regions of the mouse Interleukin-10 receptor cytoplasmic domain. *Mol. Cell. Biol.* 15: 5043-5053.
4. Unkeless, J.C., et al. 1995. Function of human Fc  $\gamma$  RIIBa and Fc  $\gamma$  RIIBb. *Semin. Immunol.* 7: 37-44.
5. Vely, F., et al. 1998. A new set of monoclonal antibodies against human Fc  $\gamma$  RIIB (CD32) and Fc  $\gamma$  RIIBc (CD16): characterization and use in various assays. *Hybridoma* 16: 519-528.
6. Sondermann, P., et al. 1999. Characterization and crystallization of soluble human Fc  $\gamma$  receptor II (CD32) isoforms produced in insect cells. *Biochemistry* 38: 8469-8477.
7. Batteux, F., et al. 2000. FC $\gamma$ RIIB (CD32)-dependent induction of interferon- $\alpha$  by serum from patients with lupus erythematosus. *Eur. Cytokine Netw.* 10: 509-514.
8. Bowles, J.A. and Weiner, G.J. 2005. CD16 polymorphisms and NK activation induced by monoclonal antibody-coated target cells. *J. Immunol. Methods* 304: 88-99.

## CHROMOSOMAL LOCATION

Genetic locus: Fcgr2b/Fcgr3a (mouse) mapping to 1 H3.

## RESEARCH USE

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

## SOURCE

Fc  $\gamma$  RIIB/CD16-2 (2.4G2) is a rat monoclonal antibody raised against Fc  $\gamma$  RIIB/CD16-2.

## 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.

Available as phycoerythrin (sc-18867 PE) or fluorescein (sc-18867 FITC) conjugates for flow cytometry, 100 tests.

Available azide-free for Mouse Fc Receptor blocking, sc-18867 L, 200  $\mu$ g/0.1 ml.

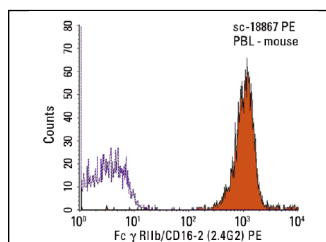
## APPLICATIONS

Fc  $\gamma$  RIIB/CD16-2 (2.4G2) is recommended for detection of Fc  $\gamma$  RIIB and CD16-2 of mouse origin by 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).

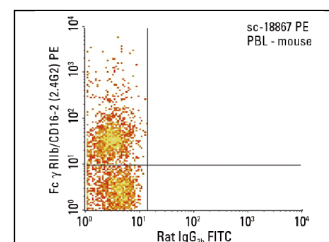
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use goat anti-rat IgG-FITC: sc-2011 (dilution range: 1:100-1:400) or goat anti-rat IgG-TR: sc-2782 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Fc  $\gamma$  RIIB/CD16-2 (2.4G2) PE: sc-18867 PE. FCM analysis of mouse peripheral blood leukocytes. Black line histogram represents the isotype control, normal rat IgG<sub>2b</sub>: sc-2873.



Fc  $\gamma$  RIIB/CD16-2 (2.4G2) PE: sc-18867 PE. FCM analysis of mouse peripheral blood leukocytes. Quadrant markers were set based on the isotype control, normal rat IgG<sub>2b</sub>: sc-2873.

## SELECT PRODUCT CITATIONS

1. Wang, R., et al. 2010. Glioblastoma stem-like cells give rise to tumour endothelium. *Nature* 468: 829-833.

## STORAGE

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

## PROTOCOLS

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