

Analyte Specific Reagent.

Analytical and performance characteristics are not established.

SPECIFICITY

The CD16 antigen is the low-affinity receptor for IgG (Fc_γRIII) that binds immune complexes, but not monomeric IgG. The CD16 antigen exists in two different forms encoded by two different genes: Fc_γRIIIA (or III-2) and Fc_γRIIIB (or III-1). The genetic heterogeneity of CD16 generates alternative membrane-anchored molecules. One is a transmembrane form (Fc_γRIIIA, 50 – 65 kDa) expressed on NK cells, monocytes and macrophages. The other is a glycosylphosphatidylinositol (GPI)-anchored form (Fc_γRIIIB, 48 kDa) only expressed on neutrophils (1, 2).

It has been shown that the CD16 antigen can be non covalently associated within the membrane of NK cells, to the 16 kDa CD3ζ chain (3), or to the dimeric Fc_γR chain (4).

The 3G8 monoclonal antibody (mAb) binds to Fc_γRIIIA as well as to Fc_γRIIIB (strongly). It was shown to block almost completely the binding of IgG dimers to Fc_γRIIIB (5). Experiments where amino acid mutations were done on the Fc_γRIIIB molecule, showed that the 3G8 mAb is affected by Lys162 and Val164 substitutions in the FG loop of the membrane-proximal Ig-like domain of the molecule (6).

The 3G8 mAb has been assigned to the CD16 cluster of differentiation at the fifth International Workshop on Human Leucocyte Differentiation Antigens held in Boston, USA, in 1993 (7)

REAGENT

IOTest CD16-ECD Conjugated Antibody
PN A33098 – Liquid 1 mL
– 10 µL / test*

Clone 3G8
Isotype IgG1 (kappa), mouse
Immunogen Human neutrophils
Hybridoma Myeloma SP2/0 x Balb/c spleen cells
Source Ascites fluid
Purification Ion exchange or affinity chromatography

Conjugation The Ig is conjugated to a tandem dye constituted of R-phycoerythrin covalently linked to texas red at 0.8-1 mole of ECD[™] per mole of Ig.

Excitation wavelength: 488 nm
Maximum emission wavelength: 613 nm
Main emission color: Red

REAGENT CONTENTS

This reagent is provided in phosphate-buffered saline containing 0.1% sodium azide (NaN₃) as preservative, and 2 mg/mL bovine serum albumin (BSA).

STATEMENT OF WARNINGS

1. This reagent contains 0.1% sodium azide. Sodium azide under acid conditions yields hydrazoic acid, an extremely toxic compound. Azide compounds should be flushed with running water while being discarded. These precautions are recommended to avoid deposits in metal piping in which explosive conditions can develop. If skin or eye contact occurs, wash excessively with water.
2. Specimens, samples and all material coming in contact with them should be handled as if capable of transmitting infection and disposed of with proper precautions.
3. Never pipet by mouth and avoid contact of samples with skin and mucous membranes.
4. Do not use reagent beyond the expiration date on the vial label.
5. Minimize exposure of reagent to light during storage or incubation.
6. Avoid microbial contamination of reagent or erroneous results may occur.
7. Use good laboratory practices when handling this reagent.

STORAGE CONDITIONS AND STABILITY

This reagent is stable up to the expiration date printed on the vial label when stored at 2 – 8°C in the dark. Do not freeze. Minimize exposure to light.

REAGENT PREPARATION

No preparation is necessary. This reagent is used directly from the vial. Bring reagent to 18 – 25°C prior to use.

SELECTED RESEARCH REFERENCES

1. Ravetch, J.V., Perussia, B., "Alternative membrane forms of Fc_γRIII (CD16) on human natural killer cells and neutrophils", 1989, J. Exp. Med., 170, 481-497.
2. Huizinga, T.W.J., Roos, D., Von dem Borne, A.E.G. Kr., "Neutrophil Fc_γ receptors: A two-way bridge in the immune system", 1990, Blood, 75, 1211-1214.
3. Lanier, L.L., Yu, G., Phillips, J.H., "Co-association of CD3dζ with a receptor (CD16) for IgG Fc on human natural killer cells", 1989, Nature, 342, 803-805.
4. Hibbs, M., L., Selvaraj, P., Carpen, O., Springer, T.A., Kuster, H., Jouvin, M.-H., Kinet, J.-P., "Mechanisms for regulating expression of membrane isoforms of Fc_γRIII (CD16)", 1989, Science, 246, 1608-1611.
5. Tamm, A., Schmidt, R.E., "The binding epitopes of human CD16 (Fc_γRIII) monoclonal antibodies: Implication for ligand binding", 1996, J. Immunol., 157, 1576-1581.
6. Tamm, A., Bassmann, Schmidt, R.E., "Natural killer cell structural studies: Localization of the epitopes of human CD16 (Fc_γRIII) monoclonal antibodies on the molecular model of CD16", 1997, Leucocyte Typing VI, White Cell Differentiation Antigens, Kishimoto, T., et al, Eds., Garland Publishing, Inc., 324-326.
7. Ritz, J., Trinchieri, G., Lanier, L.L., "NK-cell antigens: section report", 1995, Leucocyte Typing V, White Cell Differentiation Antigens. Schlossman, S.F., et al., Eds., Oxford University Press, 1367-1372.

PRODUCT AVAILABILITY

IOTest CD16-ECD Conjugated Antibody
PN A33098 – Liquid 1 mL
– 10 µL / test*

* 10 µL is the quantity of product sufficient to stain 5 x 10⁵ cells in a standard immunofluorescence assay

IOTest[®] CD16-ECD

PN A33098 – Liquid 1 mL – 10 μ L / test* – Clone 3G8

For additional information in the USA, call 800-526-7694.
Outside the USA, contact your local Beckman Coulter representative.

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Manufactured by:

Immunotech, a Beckman Coulter Company
130, avenue de Lattre de Tassigny, B.P. 177
13276 Marseille Cedex 9, France

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