

# Human Fc gamma RIII (CD16) Alexa Fluor® 405-conjugated Antibody

Monoclonal Mouse IgG<sub>2A</sub> Clone # 1001049

Catalog Number: FAB4325V

100 µg

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Fc gamma RIII/CD16a in direct ELISAs. In direct ELISAs, 60% cross-reactivity with Fc gamma RIIIB/CD16b is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>2A</sub> Clone # 1001049
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Human embryonic kidney cell, HEK293-derived human Fc gamma RIII/CD16a Gly17-Gln208 Accession # P08637
<b>Conjugate</b>	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	Human PBMC

## PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

## BACKGROUND

Fcγ RIIIa is a low/intermediate affinity receptor for polyvalent immune-complexed IgG. It is involved in phagocytosis, secretion of enzymes and inflammatory mediators, antibody-dependent cytotoxicity and clearance of immune complexes (1, 2). In humans, it is a 50-70 kDa type I transmembrane activating receptor expressed by NK cells, T cells, monocytes, and macrophages (1). Fcγ RIIIb is highly related, sharing 97% amino acid (aa) identity within the extracellular domain (ECD), but is a GPI-linked receptor expressed on human neutrophils and eosinophils (1, 2). The ECD of Fcγ RIIIa shares 63%, 61%, 65%, 59% and 58% aa identity with mouse Fcγ RIV, rat Fcγ RIIIa, feline CD16, bovine CD16 and porcine Fcγ RIIIb paralogs, respectively. The Fcγ RIIIa cDNA encodes 254 aa including a 16 aa signal sequence, 191 aa ECD with two C2-type Ig-like domains and five potential N-glycosylation sites, a 22 aa transmembrane (TM) sequence and a 25 aa cytoplasmic domain. In humans, a single nucleotide polymorphism creates high binding (176V) and low binding (176F) forms that, when homozygous, may influence susceptibility to autoimmune diseases or response to therapeutic IgG antibodies (3, 4). Catalog # 4325-FC is expressed as the 176V isoform of Fcγ RIIIa. Fcγ RIIIa surface expression requires interaction of an accessory chain, either the common γ-chain or CD3ζ (5, 6). Glycosylation patterns, electrophoretic mobility and binding affinity appear to differ between NK cell and monocyte Fcγ RIIIa (7). The ECD of both Fcγ RIIIa and b can be proteolytically cleaved and retain binding activity in soluble form (8-11). In monocytes and macrophages, activation and phagocytosis can trigger Fcγ RIIIa release (11). Soluble Fcγ RIII can be detected in normal plasma and is increased in rheumatoid arthritis and in coronary artery diseases (9, 10).

## References:

1. Nimmerjahn, F. and J.V. Ravetch (2006) *Immunity* **24**:19.
2. Ravetch, J.V. and B. Perussia (1989) *J. Exp. Med.* **170**:481.
3. Wu, J. *et al.* (1997) *J. Clin. Invest.* **100**:1059.
4. Dall'Ozzo, S. *et al.* (2004) *Cancer Res.* **64**:4664.
5. Kim, M.-K. *et al.* (2003) *Blood* **101**:4479.
6. Lanier, L.L. *et al.* (1989) *Nature* **342**:803.
7. Edberg, J.C. and R.P. Kimberley (1997) *J. Immunol.* **159**:3849.
8. Li, P. *et al.* (2007) *J. Biol. Chem.* **282**:6210.
9. Masuda, M. *et al.* (2003) *J. Rheumatol.* **30**:1911.
10. Masuda, M. *et al.* (2006) *Atherosclerosis* **188**:377.
11. Webster, N.L. *et al.* (2006) *J. Leukoc. Biol.* **79**:294.

# Human Fc gamma RIII (CD16) Alexa Fluor® 405-conjugated Antibody

Monoclonal Mouse IgG<sub>2A</sub> Clone # 1001049

Catalog Number: FAB4325V

100 µg

## PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.