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## **Recombinant Human Fcy RIIIA/CD16a**

Catalog Number: 4325-FC

**R**DSYSTEMS

DESCRIPTION	
Source	Mouse myeloma cell line, NS0-derived human Fc gamma RIIIA/CD16a protein Gly17-Gln208, with a C-terminal 6-His tag Accession # AAH17865
N-terminal Sequence Analysis	Gly17
Predicted Molecular Mass	22.6 kDa

SPECIFICATIONS	
SDS-PAGE	40-50 kDa, reducing conditions
Activity	Measured by its ability to bind human IgG with an estimated $K_d$ <50 nM.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE	
Reconstitution	Reconstitute at 100 μg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
	<ul> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> </ul>
	1 month, 2 to 8 °C under sterile conditions after reconstitution.
	<ul> <li>3 months20 to -70 °C under sterile conditions after reconstitution.</li> </ul>



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### **R**DSYSTEMS

#### BACKGROUND

Fcy 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). Fcy 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 Fcy RIIIa shares 63%, 61%, 65%, 59% and 58% aa identity with mouse Fcy RIV, rat Fcy RIIIa, feline CD16, bovine CD16 and porcine Fcy RIIIb paralogs, respectively. The Fcy 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 Fcy RIIIa. Fcy RIIIa surface expression requires interaction of an accessory chain, either the common  $\gamma$ -chain or CD3 $\zeta$  (5, 6). Glycosylation patterns, electrophoretic mobility and binding affinity appear to differ between NK cell and monocyte Fcy RIIIa (7). The ECD of bot Fcy RIIIa release (11). Soluble Fcy RIII can be detected in normal plagocytosis can trigger Fcy RIIIa release (11). Soluble Fcy RIII can be detected in normal plasma and is increased in rheumatoid arthritis and in coronary artery diseases (9, 10).

#### References:

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