Recombinant Human Fcγ RIIA/CD32a (R167)

Catalog Number: 1330-CD

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Ala36-Ile218, with a C-terminal 10-His tag Accession # AAA35827
N-terminal Sequence Analysis	Ala36
Predicted Molecular Mass	22 kDa

SPECIFICATIONS

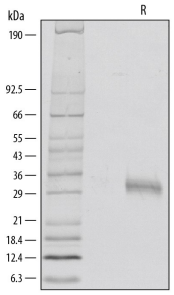
SDS-PAGE	32 kDa, reducing conditions
Activity	Measured by its ability to bind human IgG with an estimated K_d <80 nM.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 10 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
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.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

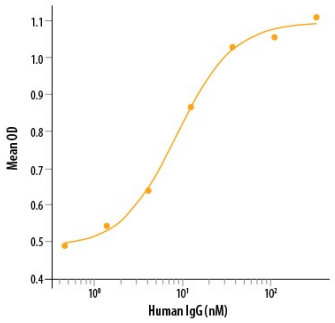
DATA

SDS-PAGE



1 µg/lane of Recombinant Human Fcγ RIIA/CD32a (R167) was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a band at 32 kDa.

Binding Activity



Recombinant Human Fcγ RIIA/CD32a (R167) (Catalog # 1330-CD) binds human IgG with an estimated K_D <80 nM.

BACKGROUND

Receptors for the Fc region of IgG (Fc γ R) are members of the Ig superfamily that function in the activation or inhibition of immune responses. Three classes of human Fc γ Rs: RI (CD64), RII (CD32), and RIII (CD16), which generate multiple isoforms, are recognized (1-3). The activating-type receptor either has or associates non-covalently with an accessory subunit (FcRγ or ζ chain) that has an immunoreceptor tyrosine-based activation motif (ITAM) in its cytoplasmic domain. In contrast, the inhibitory receptor (Fc γ RIIB) has a built-in immunoreceptor tyrosine-based inhibitory motif (ITIM) in its own cytoplasmic domain. Fc γ RI is a high-affinity receptor that binds monomeric IgG, both Fc γ RII and RIII are low-affinity receptors that bind aggregated or immune complexed IgG (IC).

Three genes for human Fc γ RII (A, B, and C) and one for mouse (Fc γ RIIB), encoding type I transmembrane proteins with ITAM motifs (Fc γ RII A and C) or ITIM motifs (Fc γ RIIB) in their cytoplasmic domains, have been identified (1-3). The extracellular domain of human Fc γ RIIA shares approximately 90% amino acid sequence homology with human Fc γ RIIB and Fc γ RIIC. Fc γ RIIA is expressed on many immune cell types (macrophage, neutrophil, eosinophils, platelets, dendritic cells and Langerhan cells) where inhibitory ITIM-bearing receptors may also be coexpressed and co-engaged by specific ligands. Signaling through Fc γ RIIA results in the initiation of inflammatory responses (cytolysis, phagocytosis, degranulation and cytokine production) that can be modulated by signals from the inhibitory receptors. The strength of the signal is dependent on the ratio of expression of the activating and inhibitory receptors. Besides IC, Fc γ RII A also binds C-reactive protein (CRP) (4, 5). Two allelic variants (R167 and H167) of Fc γ RIIA that differ in their ability to ligate human IgG2 or CRP exist. The H167 allele has been found to have a protective effect against lupus nephritis.

References:

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3. Takai, T. (2002) Nature Rev. Immunol. **2**:580.
4. Chi, M. *et al.* (2002) J. Immunol. **168**:1413.
5. Zuniga, R. *et al.* (2003) Arthritis Rheum. **48**:460.

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