Recombinant Mouse FcgR4/CD16-2

Catalog Number: 1974-CD

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Gly21-Gln203, with a C-terminal 10-His tag Accession # NP_653142
N-terminal Sequence Analysis	Gly21
Predicted Molecular Mass	22.3 kDa

SPECIFICATIONS

SDS-PAGE	25-35 kDa, reducing conditions
Activity	Measured by its ability to bind mouse IgG with an estimated K_d <1 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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped with polar packs. 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.

BACKGROUND

Receptors for the Fc region of IgG (Fc γ Rs) are members of the Ig superfamily that function in the activation or inhibition of immune responses such as degranulation, phagocytosis, ADCC (antibody-dependent cellular toxicity), cytokine release, and B cell proliferation (1-3). The Fc γ Rs have been divided into three classes based on close relationships in their extracellular domains; these groups are designated Fc γ RI (also known as CD64), Fc γ RII (CD32), and Fc γ RIII (CD16). Each group may be encoded by multiple genes and exist in different isoforms depending on species and cell type. The CD64 proteins are high affinity receptors (~10^{-8}-10^{-9} M) capable of binding monomeric IgG, whereas the CD16 and CD32 proteins bind IgG with lower affinities (~10^{-6}-10^{-7} M) only recognizing IgG aggregates surrounding multivalent antigens (1, 4). Fc γ Rs that deliver an activating signal either have an intrinsic immunoreceptor tyrosine-based activation motif (ITAM) within their cytoplasmic domains or associate with one of the ITAM-bearing adapter subunits, Fc Rγ or ζ (3, 5). The only inhibitory member in human and mouse, Fc γ RIIb, has an intrinsic cytoplasmic immunoreceptor tyrosine-based inhibitory motif (ITIM). The coordinated functioning of activating and inhibitory receptors is necessary for successful initiation, amplification, and termination of immune responses (5).

Human CD16 is encoded by two genes; Fc γ RIIIA is an activating transmembrane receptor expressed in macrophages and NK cells, and Fc γ RIIIB is a GPI-linked protein on granulocytes (2). Mouse Fc γ RIII and human Fc γ RIIIA share 44% amino acid identity and are frequently described as functional equivalents (5).

CD16-2, also referred to as Fcg R4, is a protein that is more closely related to human Fc γ RIIIA (60% amino acid identity) and may be its true ortholog (6). Similar to other activating receptors, it possesses a charged residue within its transmembrane domain that is necessary for association with an ITAM bearing accessory protein. CD16-2 RNA expression was observed in peripheral blood leukocytes, spleen, thymus, colon, and intestine.

References:

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5. Ravetch, J. and L. Lanier (2000) Science **290**:84.
6. Mechetina, L. *et al.* (2002) Immunogenetics **54**:463.

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