Human CD16a / FCGR3A Protein (176 Phe, His & AVI Tag), Biotinylated

Catalog Number: 10389-H27H-B

Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

CD16; CD16A; Fc gamma RIIIa; FCG3; FCGR3; FCGRIII; FCR-10; FCRIII; FCRIIIA; IGFR3; IMD20; 4833442P21Rik; CD16; CD16-2; FcgammaRIV; Fcgr3a; FcgRIV; Fcrl3

Protein Construction:

A DNA sequence encoding the extracellular domain (Met 1-Gln 208) of human CD16a (P08637-1) was fused with a c-terminal polyhistidine tagged AVI tag at the C-terminus. The expressed protein was biotinylated in vivo by the Biotin-Protein ligase (BirA enzyme) which is co-expressed. It is identical to FCGR3A158F/V in the reference.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: > 90 % as determined by SDS-PAGE

Bio Activity:

1. Measured by its ability to bind recombinant human IgG1 in a functional ELISA. 2. Measured by its binding ability in a functional ELISA. Immobilized Human IgG1 at 10 μg/ml (100 μl/well) can bind Human CD16a(Cat:10389-H27H-B). The EC_{50} of Human CD16a(Cat:10389-H27H-B) is 2.4 - 5.7 μg/ml. 3. Labeling ratio of biotin to protein: 0.7-1.

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Gly 17

Molecular Mass:

The secreted recombinant human CD16a consists of 223 amino acids and predicts a molecular mass of 25.1 kDa. By SDS-PAGE under reducing conditions, the apparent molecular mass of the protein is approximately 48 kDa due to glycosylation.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

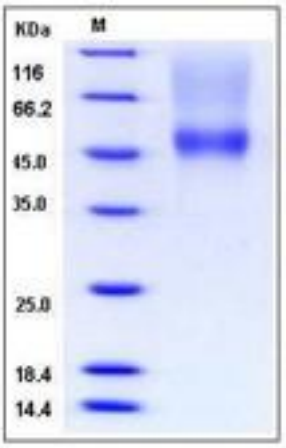
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

The Fc receptor with low affinity for IgG (FCGR3, or CD16) is encoded by 2 nearly identical genes, FCGR3A and FCGR3B, resulting in tissue-specific expression of alternative membrane-anchored isoforms. FCGR3A, it is also known as CD16a, encodes a transmembrane protein expressed on activated monocytes/macrophages, natural killer (NK) cells, and a subset of T cells.
CD16a / FCGR3A is a receptor expressed on NK cells that facilitates antibody dependent cellular cytotoxicity (ADCC) by binding to the Fc portion of various antibodies. CD16a / FCGR3A also has a broader function. CD16a / FCGR3A is directly involved in the lysis of some virus-infected cells and tumor cells by NK cells, independent of antibody binding. Cross-linking of CD16a / FCGR3A on NK cells resulted in increased intracellular Ca2+ levels and a cascade of biochemical events similar to those activated by the T cell receptor. CD16a / FCGR3A on human NK cells is a lysis receptor that mediates the direct killing of some virus infected and tumor cells, independent of antibody ligation.

References

1.David Dornan, et al. Effect of FCGR2A and FCGR3A variants on CLL outcome. Blood. 2010 116: 4212-4222
2. Edberg JC, et al. (2002) Genetic linkage and association of Fcgamma receptor IIIA (CD16A) on chromosome 1q23 with human systemic lupus erythematosus. Arthritis Rheum. 46(8): 2132-40.
3. Li P, et al. (2002) Recombinant CD16A-Ig forms a homodimer and cross-blocks the ligand binding functions of neutrophil and monocyte Fcgamma receptors. Mol Immunol. 38(7): 527-38.