Data Sheet (Cat.No.TMPY-00763)

CD16a Protein, Human, Recombinant (176F, His)

General Information

Synonyms:	FCR-10;CD16A;IGFR3;Fc gamma RIIIa;Fc fragment of IgG, low affinity IIIa, receptor (CD16a); FCGR3;FCG3;Fc γ RIIIa;FCRIII;CD16;FCRIIIA;IMD20;FCGRIII
Protein Construction:	Gly17-Gln208
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P08637
Molecular Weight:	22.7 kDa (predicted); 35-50 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Loaded Human IgG1 Fc on Protein-A Biosensor, can bind Human CD16a (F176)-His with an affinity constant of 1.35 uM as determined in BLI assay. (Regularly tested) Loaded Human CD16a (F176)-His on HIS1K Biosensor, can bind Anti-Human HER2 mAb with an affinity constant of 3.4 uM as determined in BLI assay. Loaded Human CD16a (F176)-His on HIS1K Biosensor, can bind Anti-Human CD16 mAb with an affinity constant of 0.07 nM as determined in BLI assay.
Purity:	> 95 % as determined by SDS-PAGE. > 90 % as determined by SEC-HPLC
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

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.

Reference

David Dornan, et al. Effect of FCGR2A and FCGR3A variants on CLL outcome. Blood. 2010 116: 4212-4222