

CD64 Protein, Human, Recombinant (His & Avi), Biotinylated

General Information

Synonyms:	Fc γ RI; Fc receptor, IgG, high affinity I; CD64; Fc gamma RI
Protein Construction:	A DNA sequence encoding the extracellular domain of human CD64 (NP_000557.1) (Met 1-Thr 287) 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. Predicted N terminal: Gln 16
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P12314-1
Molecular Weight:	34.4 kDa (predicted)

QC Testing

Biological Activity:	<ol style="list-style-type: none">1. Immobilized Rituximab (IgG1) at 1 μg/mL can bind Biotinylated Human FcγRI / CD64 recombinant protein (His & Avi Tag), the EC50 is 1-3 ng/mL.2. Loaded Biotinylated Human FcγRI / CD64 recombinant protein (His & Avi Tag) on SA Biosensor, can bind Nivolumab (IgG4) with an affinity constant of 6.6 nM as determined in a BLI assay.3. Loaded Rituximab (IgG1) on ProA Biosensor, can bind Biotinylated Human FcγRI / CD64 recombinant protein (His & Avi Tag) with an affinity constant of 0.54 nM as determined in a BLI assay.4. Loaded Biotinylated Human FcγRI / CD64 recombinant protein (His & Avi Tag) on SA Biosensor, can bind Bevacizumab (IgG1) with an affinity constant of 1.35 nM as determined in a BLI assay.
Purity:	> 95 % as determined by SDS-PAGE. > 85 % as determined by SEC-HPLC
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

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

High affinity immunoglobulin gamma Fc receptor I, also known as FCGR1 and CD64, is an integral membraneglycoprotein and a member of the immunoglobulin superfamily. CD64 is a high affinity receptor for the Fc region of IgG gamma and functions in both innate and adaptive immune responses. Receptors that recognize the Fc portion of IgG function in the regulation of immune response and are divided into three classes designated CD64, CD32, and CD16. CD64 is structurally composed of asignal peptidethat allows its transport to the surface of a cell, threeextracellularimmunoglobulin domains of the C2-type that it uses to bind antibody, a hydrophobictransmembrane domain, and a short cytoplasmic tail. CD64 is constitutively found on only macrophages and monocytes, but treatment of polymorphonuclear leukocytes with cytokines like IFN γ and G-CSF can induce CD64 expression on these cells. The inactivation of the mouse CD64 resulted in a wide range of defects in antibody Fc-dependent functions. Mouse CD64 is an early participant in Fc-dependent cell activation and in the development of immune responses.

Reference

Allen J.M., et al.,(1988), Nucleotide sequence of three cDNAs for the human high affinity Fc receptor (FcRI). Nucleic Acids Res. 16:11824-11824.

Allen J.M., et al., (1989), Isolation and expression of functional high-affinity Fc receptor complementary DNAs. Science 243:378-381.

Porges A.J., et al.,(1992), Novel Fc gamma receptor I family gene products in human mononuclear cells.J. Clin. Invest. 90:2102-2109.

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