

Fc gamma RIIIA/CD16a Protein, Human (HEK293, His-HSA)

Cat. No.:	HY-P78677
Synonyms:	FCGR3A; CD16A; FCG3; FCGR3; IGFR3
Species:	Human
Source:	HEK293
Accession:	P08637 (G17-Q208, F176V)
Gene ID:	2214
Molecular Weight:	90-115 kDa

PROPERTIES

Biological Activity	Loaded Anti-Human CD16a Antibody on 96-Flat plate, can bind Human CD16a, with an affinity constant of 12 nM as determined in BLI assay (Gator Prime).
Appearance	Lyophilized powder
Formulation	Lyophilized a 0.22 µm filtered solution of 20 mM Tris-HCl, 0.5 M NaCl, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

Fc gamma RIIIA/CD16a Protein serves as a receptor for the invariable Fc fragment of immunoglobulin gamma (IgG), optimally activated upon binding clustered antigen-IgG complexes displayed on cell surfaces, initiating antibody-dependent cellular cytotoxicity (ADCC). This process involves the lysis of antibody-coated cells, preventing inappropriate effector cell activation in the absence of an antigenic trigger. The protein mediates IgG effector functions on natural killer (NK) cells, binding antigen-IgG complexes generated during infection to trigger NK cell-dependent cytokine production and degranulation. Fc gamma RIIIA/CD16a is crucial in generating memory-like adaptive NK cells that efficiently eliminate virus-infected cells via ADCC. It regulates NK cell survival, proliferation, and prevents NK cell progenitor apoptosis. As an Fc-binding subunit, it associates with CD247 and/or FCER1G adapters to form functional signaling complexes, leading to intracellular signaling cascades that drive NK cell activation. The protein also plays a role in mediating the antitumor activities of therapeutic antibodies, triggering TNFA-dependent ADCC of IgG-coated tumor cells and enhancing ADCC in response to afucosylated IgGs. In the context of Dengue virus infection, Fc gamma RIIIA/CD16a is involved in pathogenesis through an antibody-dependent enhancement (ADE) mechanism, facilitating virus entry into myeloid cells and subsequent viral replication during secondary infections.

Caution: Product has not been fully validated for medical applications. For research use only.

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