

## Fc gamma RIIIA/CD16a Protein, Human (F176V, HEK293, SUMO-His)

Cat. No.:	HY-P78676
Synonyms:	FCGR3A; CD16A; FCG3; FCGR3; IGFR3
Species:	Human
Source:	HEK293
Accession:	P08637 (G17-Q208, F176V)
Gene ID:	2214
Molecular Weight:	42-65 kDa

### PROPERTIES

AA Sequence	<pre> GMRTEDLPKA   VVFLLEPQWYR   VLEKDSVTLK   CQGAYSPEDN STQWFHNESL   ISSQASSYFI   DAATVDDSGE   YRCQTNLSTL SDPVQLEVHI   GWLLLQAPRW   VFKEEDPIHL   RCHSWKNTAL HKVTY LQNGK   GRKYFHHNSD   FYIPKATLKD   SGSYFCRGLV GSKNV SSETV   NITITQGLAV   STISSFFPPG   YQ           </pre>
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized Human FcγRIIIA / CD16a recombinant protein at 2 μg/mL (100 μL/well) can bind Human IgG1. The ED <sub>50</sub> for this effect is 93.49 ng/mL, corresponding to a specific activity is 1.070×10 <sup>4</sup> Unit/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized a 0.22 μm filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4.
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 <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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
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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.

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

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