

## Fc gamma RIII/CD16 Protein, Rhesus Macaque (His-Avi)

<b>Cat. No.:</b>	HY-P77312
<b>Synonyms:</b>	Low affinity immunoglobulin gamma Fc region receptor III; FcRIII; FCGR3
<b>Species:</b>	Rhesus Macaque
<b>Source:</b>	HEK293
<b>Accession:</b>	A3RFZ7 (M1-Q208)
<b>Gene ID:</b>	720006
<b>Molecular Weight:</b>	Approximately 25.3 kDa.

### PROPERTIES

<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution of PBS, pH 7.4. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
<b>Endotoxin Level</b>	<1 EU/ $\mu$ g, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

#### Background

Fc gamma RIII/CD16 Protein serves as a receptor for the invariable Fc fragment of immunoglobulin gamma (IgG) and is optimally activated upon binding clustered antigen-IgG complexes displayed on cell surfaces, initiating the process of antibody-dependent cellular cytotoxicity (ADCC) leading to the lysis of antibody-coated cells. It does not bind free monomeric IgG, thereby avoiding inappropriate effector cell activation in the absence of an antigenic trigger. This receptor 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, limiting viral load and propagation. Fc gamma RIII/CD16 is crucial in generating memory-like adaptive NK cells capable of producing high amounts of IFNG, efficiently eliminating virus-infected cells via ADCC, and regulating NK cell survival and proliferation by preventing NK cell progenitor apoptosis. As an Fc-binding subunit, it associates with CD247 and/or FCER1G adapters to form functional signaling complexes, initiating intracellular signaling cascades that drive NK cell activation. The ITAM-dependent signaling coupled with receptor phosphorylation by PKC mediates robust intracellular calcium flux, leading to the production of pro-inflammatory cytokines. Additionally, Fc gamma RIII/CD16 costimulates NK cells and triggers the lysis of target cells independently of IgG binding, mediating the antitumor activities of therapeutic antibodies. It also plays a role in enhanced ADCC in response to afucosylated IgGs. The protein forms a heterooligomeric complex with ITAM-containing signaling subunits, including homodimers of CD247 or FCER1G, or a heterodimer of CD247 and FCER1G, to constitute a functional receptor complex. Fc

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gamma RIII/CD16 interacts with the Fc region of antigen-complexed IgG, showing a preference for IgG1 and IgG3 isotypes. It further interacts with CD2, contributing to NK cell activation and cytotoxicity, and with S100A4, inhibiting PKC-dependent phosphorylation of FCGR3A.

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

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