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

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| **Cat. No.:** | HY-P77314 |
| **Synonyms:** | Low affinity immunoglobulin gamma Fc region receptor III; FcRIII; FCGR3 |
| **Species:** | Rhesus Macaque |
| **Source:** | HEK293 |
| **Accession:** | A3RFZ7 (G17-G206) |
| **Gene ID:** | 720006 |
| **Molecular Weight:** | Approximately 32-41 kDa. |

## PROPERTIES

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| **AA Sequence** | G M R A E D L P K A V V F L E P Q W Y R V L E K D S V T L K C Q G A Y S P E D N<br>S T R W F H N E S L I S S Q T S S Y F I A A A R V N N S G E Y R C Q T S L S T L<br>S D P V Q L E V H I G W L L L Q A P R W V F K E E E S I H L R C H S W K N T L L<br>H K V T Y L Q N G K G R K Y F H Q N S D F Y I P K A T L K D S G S Y F C R G L I<br>G S K N V S S E T V N I T I T Q D L A V S S I S S F F P P G |
| **Biological Activity** | Measured by its binding ability in a functional ELISA. Immobilized Rhesus CD16 at 10 μg/mL (100 μL/well) can bind Biotinylated Human lgG. The $ED_{50}$ for this effect is 0.2155 μg/mL. |
| **Appearance** | Lyophilized powder |
| **Formulation** | Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. |
| **Endotoxin Level** | <1 EU/μg, determined by LAL method. |
| **Reconsititution** | It is not recommended to reconstitute to a concentration less than 100 μg/mL in $ddH_2O$. |
| **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

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| **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 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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