10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

CD16 / Fc-gamma Receptor III Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone HuNK2]
Catalog # AH11208

Product Information

Application	IF, FC
Primary Accession	P08637
Other Accession	2214, 372679
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG2a, kappa
Clone Names	HuNK2
Calculated MW	29089

Additional Information

Gene ID	2214
Other Names	Low affinity immunoglobulin gamma Fc region receptor III-A, CD16a antigen, Fc-gamma RIII-alpha, Fc-gamma RIII, Fc-gamma RIIIa, FcRIII, FcRIIIa, FcR-10, IgG Fc receptor III-2, CD16a, FCGR3A, CD16A, FCG3, FCGR3, IGFR3
Application Note	IF~~1:50~200 FC~~1:10~50
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	CD16 / Fc-gamma Receptor III Antibody - With BSA and Azide is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	FCGR3A {ECO:0000303|PubMed:23006327}
Function	Receptor for the invariable Fc fragment of immunoglobulin gamma (IgG). Optimally activated upon binding of clustered antigen-IgG complexes displayed on cell surfaces, triggers lysis of antibody-coated cells, a process known as antibody-dependent cellular cytotoxicity (ADCC). Does not bind free monomeric IgG, thus avoiding inappropriate effector cell activation in the absence of antigenic trigger (PubMed:11711607, PubMed:21768335, PubMed:22023369, PubMed:24412922, PubMed:25786175, PubMed:25816339, PubMed:28652325, PubMed:8609432, PubMed:9242542). Mediates IgG effector functions on natural killer (NK) cells. Binds antigen-IgG complexes generated upon infection and triggers NK cell-dependent cytokine production and degranulation to limit viral load and propagation. Involved in

	the generation of memory- like adaptive NK cells capable to produce high amounts of IFNG and to efficiently eliminate virus-infected cells via ADCC (PubMed:24412922, PubMed:25786175). Regulates NK cell survival and proliferation, in particular by preventing NK cell progenitor apoptosis (PubMed:29967280, PubMed:9916693). Following the engagement of antigen-IgG complexes, triggers phosphorylation of immunoreceptor tyrosine-based activation motif (ITAM)-containing adapters with subsequent activation of phosphatidylinositol 3-kinase signaling and sustained elevation of intracellular calcium that ultimately drive NK cell activation. The ITAM-dependent signaling coupled to receptor phosphorylation by PKC mediates robust intracellular calcium flux that leads to production of pro-inflammatory cytokines, whereas in the absence of receptor phosphorylation it mainly activates phosphatidylinositol 3-kinase signaling leading to cell degranulation (PubMed:1825220, PubMed:23024279, PubMed:2532305). Costimulates NK cells and trigger lysis of target cells independently of IgG binding (PubMed:10318937, PubMed:23006327). Mediates the antitumor activities of therapeutic antibodies. Upon ligation on monocytes triggers TNFA-dependent ADCC of IgG-coated tumor cells (PubMed:27670158). Mediates enhanced opsonization and ADCC in response to afucosylated IgGs (PubMed:34485821, PubMed:28566370).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Secreted. Note=Also exists as a soluble receptor
Tissue Location	Expressed in natural killer cells (at protein level) (PubMed:2526846). Expressed in a subset of circulating monocytes (at protein level) (PubMed:27670158).

Background

Recognizes a protein of 50-65kDa, identified as CD16 (Workshop IV; Code N39) (also known low affinity Fc receptor III for IgG (FcRIII) or Leu 11). CD16 exists as a polypepetide-anchored from (FCRIIIA or CD16A) on human natural killer (NK) cells and monocytes/ macrophages and as a glycosylphosphatidylinositol (GPI)-anchored form (FcRIIIB or CD16B) on neutrophils. CD16B is polymorphic and the two alleles are termed NA1 and NA2.3 CD16 plays a role in signal transduction, NK cell activation and antibody-dependent cellular cytotoxicity. This MAb has been showed to inhibit the binding of immune complex to NK cells, inhibit cytotoxicity of NK cells, and induce calcium fluxes in NK cells and neutrophils.

References

Knapp W. et al. (eds) Leukocyte Typing IV, Oxford University Press, Oxford, 1989. | Lanier LL et al. Functional properties of a unique subset of cytotoxic CD3+ T lymphocytes that express Fc receptors for IgG (CD16/Leu-11 antigen). J Exp Med 1985, 162(6):2089-2106. | Nagarajan S et al. Ligand binding and phagocytosis by CD16 (Fc gamma receptor III) isoforms. Phagocytic signaling by associated zeta and gamma subunits in Chinese hamster ovary cells. J Biol Chem 1995, 270(43):25762-25770 | McKenzie SE and Schreiber AD. Biological advances and clinical applications of Fc receptors for IgG. Curr Opin Hematol 1994, 1(1):45-52. | Cerboni C et al. CD16-mediated activation of phosphatidylinositol-3 kinase (PI-3K) in human NK cells involves tyrosine phosphorylation of Cbl and its association with Grb2, Shc, pp36 and p85 PI-3K subunit. Eur J Immunol 1998, 28(3):1005-1015. | Braakman E et al. CD16 on human □□□□T lymphocytes: expression, function, and specificity for mouse IgG isotypes. Cell Immunol 1992, 143:97-107

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