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FCGR3A Antibody (Ascites)

Mouse Monoclonal Antibody (Mab)
Catalog # AM2044a

Product Information

Application	WB, E
Primary Accession	P08637
Other Accession	NP_000560.5
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Clone Names	441CT4.2.1
Calculated MW	29089
Antigen Region	60-88

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
Target/Specificity	This FCGR3A antibody is generated from mice immunized with a KLH conjugated synthetic peptide between 60-88 amino acids from human FCGR3A.
Dilution	WB~~1:500~1000 E~~Use at an assay dependent concentration.
Format	Mouse monoclonal antibody supplied in crude ascites with 0.09% (W/V) sodium azide.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	FCGR3A Antibody (Ascites) 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).

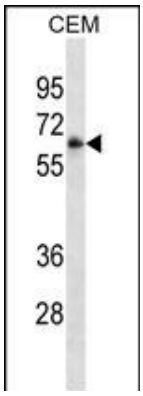
Background

This gene encodes a receptor for the Fc portion of immunoglobulin G, and it is involved in the removal of antigen-antibody complexes from the circulation, as well as other other antibody-dependent responses. This gene (FCGR3A) is highly similar to another nearby gene (FCGR3B) located on chromosome 1. The receptor encoded by this gene is expressed on natural killer (NK) cells as an integral membrane glycoprotein anchored through a transmembrane peptide, whereas FCGR3B is expressed on polymorphonuclear neutrophils (PMN) where the receptor is anchored through a phosphatidylinositol (PI) linkage. Mutations in this gene have been linked to susceptibility to recurrent viral infections, susceptibility to systemic lupus erythematosus, and alloimmune neonatal neutropenia. Alternatively spliced transcript variants encoding different isoforms have been found for this gene.

References

Dornan, D., et al. Blood 116(20):4212-4222(2010)
Li, S.C., et al. Am. J. Hematol. 85(10):810-812(2010)
Iwasaki, M., et al. Breast Cancer Res. Treat. (2010) In press :
Qu, Y.H., et al. Zhongguo Shi Yan Xue Ye Xue Za Zhi 18(4):959-962(2010)
Sfar, I., et al. Arch Inst Pasteur Tunis 86 (1-4), 51-62 (2009) :

Images



FCGR3A Antibody (Cat. #AM2044a) western blot analysis in CEM cell line lysates (35µg/lane).This demonstrates the FCGR3A antibody detected the FCGR3A protein (arrow).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.