9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

FCGR2A Human, HEK

CD32a Human Recombinant, HEK
CDA0136

Product Overview

Name	FCGR2A Human, HEK
Description	
CD32a Human Recombinant, HEK	
Accession (Primary)	P12318
Synonyms	
CD32, CD32A, CDw32, FcGR, IGFR2, MGC23887, MGC30032, Low affinity immunoglobulin gamma Fc region receptor II-a, IgG Fc receptor II-a, Fc-gamma-RIIa, FcRII-a, FCG2, FCGR2A1.	
Source	
HEK293 Cells.	
Physical Appearance	
Sterile Filtered colorless solution.	
Formulation	
FCGR2A protein solution (1mg/ml) containing 10% Glycerol and Phosphate-Buffered Saline (pH 7.4).	
Stability	
Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles.	
Purity	
Greater than 95.0% as determined by SDS-PAGE.	
Amino acid sequence	
SADSQAAAPP KAVLKLEPPW INVLQEDSVT LTCQGARSPE SDSIQWFHNG NLIPTHTQPS YRFKANNNDS GEYTCQTGQT SLSDPVHLTV LSEWLVLQTP HLEFQEGETI MLRCHSWKDK PLVKVTFFQN GKSQKFSHLD PTFSIPQANH SHSGDYHCTG NIGYTLFSSK PVTITVQVPS MGSSSPMGI H HHHHH .	
Biological Activity	
The ED50 range ≤5 ug/ml. and is measured by its binding ability in a functional ELISA with Human IgG1 Fc (CAT# pro-2763).	
Background	
The immune system is a complex network of cells and molecules that play a crucial role in protecting the body against pathogens and maintaining homeostasis. Fc gamma receptors (FcγRs) are a family of cell surface receptors that	

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mediate the effector functions of antibodies, particularly immunoglobulin G (IgG). Among these receptors, FCGR2A, also known as CD32a, is a prominent member expressed on the surface of various immune cells. This research aims to investigate the structure, function, and implications of FCGR2A protein in immune responses, with a focus on its relevance to human health and therapeutic applications. Structure and Expression of FCGR2A: FCGR2A is a transmembrane glycoprotein composed of two extracellular immunoglobulin-like domains, a transmembrane domain, and a cytoplasmic tail. It is primarily expressed on immune cells such as macrophages, monocytes, and dendritic cells. The unique structure of FCGR2A allows it to bind to the Fc portion of IgG antibodies, initiating immune effector functions. Role of FCGR2A in Immune Responses: FCGR2A plays a crucial role in modulating immune responses through its involvement in antibody-dependent cellular cytotoxicity (ADCC) and phagocytosis. Upon binding to IgG antibodies, FCGR2A triggers intracellular signaling cascades that activate immune effector cells, leading to the elimination of antibody-bound pathogens or targeted cells. Furthermore, FCGR2A is involved in immune complex clearance, regulation of cytokine production, and modulation of cellular activation, thus contributing to the overall immune response. Implications of FCGR2A in Human Health: The dysregulation of FCGR2A has been implicated in various immune-related diseases. Genetic variations in FCGR2A have been associated with increased susceptibility to autoimmune disorders, such as systemic lupus erythematosus and rheumatoid arthritis. Altered FCGR2A expression or function has also been observed in infectious diseases, including HIV and malaria, affecting disease progression and immune control. Understanding the role of FCGR2A in these conditions is crucial for developing targeted therapeutic strategies. Therapeutic Potential of FCGR2A: The unique properties of FCGR2A make it an attractive target for therapeutic interventions. Modulating FCGR2A activity and function can potentially enhance immune responses against pathogens or tumor cells. For example, monoclonal antibodies that target FCGR2A have shown promising results in cancer immunotherapy by promoting ADCC and phagocytosis of tumor cells. Furthermore, strategies aimed at selectively activating or inhibiting FCGR2A signaling could lead to the development of novel immunotherapeutic approaches. Challenges and Future Perspectives: While the study of FCGR2A holds great promise, several challenges need to be addressed. Further research is required to unravel the intricate interplay between FCGR2A and other immune receptors and signaling molecules. Additionally, the development of therapeutic agents that selectively target FCGR2A without compromising normal immune functions remains a challenge. Conclusion: The investigation of FCGR2A protein provides insights into its pivotal role in immune responses and its implications for human health and therapeutics. Understanding the structure, function, and dysregulation of FCGR2A in immune-related diseases opens avenues for the development of targeted therapies. Continued research on FCGR2A and its interactions within the immune system will contribute to advancements in immunotherapy and personalized medicine.

Precautions

FCGR2A Human, HEK is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P12318)

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