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Complement Component C1q Human RECOMBINANT PROTEIN

Catalog Number: PRP-554
Quantity: 200 micrograms, 1 milligram, 10 milligrams
Format: Sterile-filtered white lyophilized (freeze-dried) powder
Host: Human Plasma

Background:

C1q is the first component of the classical pathway of complement activation. C1q along with the enzymatically active components C1r and C1s forms the C1 complex. When C1 binds to immunoglobulins in the form of immune complexes, it leads to activation of C1r and C1s proteases and a further activates the classical pathway of complement.

C1q is a glycoprotein that belongs to the collectin family, having a molecular weight of about 410-462 kDa. C1q is a hexamer composed of globular heads attached to collagen-like triple-helix tails. The globular heads of C1q exclusively bind to the CH2 domain of IgG molecules or the CH3 domain of IgM. Each heavy chain of the immunoglobulin molecule contains a single binding site for C1q. Given that C1q must bind to no less than two heavy chains in order to alter its conformation and activate C1r and C1s, its activation follows only after binding to immunoglobulins in the form of immune complexes bound to multivalent antigens. C1q's main physiological role is in the clearance of immune complexes and apoptotic bodies from the organism. Interruption of this process may lead to development of autoimmunity. Individuals with genetic deficiencies of C1q or other components of the classical pathway are at risk to develop SLE. C1q specifically binds to apoptotic bodies of human keratinocytes, vascular endothelial cells and lymphocytes. Complement components C1q and bound C3 mediate the clearance of apoptotic bodies. Hence, C1q may advance the clearance of autoantigens, avoiding stimulation of the immune system. Nonetheless, an extended exposition of the immune

Specificity and Preparation:

Human Complement Component C1q is produced in Human plasma having a molecular mass of 410 kDa. This protein is lyophilized from 0.01M Na₂ EDTA solution containing 0.3M NaCl pH 7.5. Purity is greater than 96.0%. Plasma from each donor has been tested and found negative for antibody to HIV-1, HIV-2, HCV, HBSAG.

Usage and Storage:

It is recommended to reconstitute the lyophilized C1q in sterile 18M Ω -cm H₂O. Human C1q although stable at room temperature for 3 weeks, should be stored between 2-8°C.