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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. The C1 complex is composed of C1q and the enzymatically active components C1r and C1s. When C1 binds to immunoglobulins in the form of immune complexes, C1r and C1s proteases are activated, as well as the continuation of the classical complement pathway.

C1q is a glycoprotein belonging to the collectin family, with a molecular weight of 410-462 kDa. It is a hexamer composed of globular heads attached to collagen-like triple helix tails. The globular heads 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 no fewer than two bound heavy chains are required for C1r and C1s activation, binding to immunoglobulins carrying multivalent antigens is required to proceed down the complement pathway. The main physiological role of C1q is in the clearance of immune complexes and apoptotic bodies. Interruption of this process may lead to development of autoimmune dysfunction. Autoantibodies against C1q are found in a number of autoimmune and infectious diseases such as glomerulonephritis and lupus erythematosus.

Specificity and Preparation:

Human complement component C1q is purified from human plasma. The protein is lyophilized from a solution containing 10 mM EDTA/0.3 M NaCl pH 7.5. The purity is >96%. Plasma from each donor has been tested and found negative for antibodies to HIV-1, HIV-2, HCV, and HBSAG.

Usage and Storage:

Reconstitute the lyophilized C1q in sterile 18M Ω -cm H₂O. Although, human C1q is stable at room temperature for 3 weeks, material should be stored between 2-8°C.