

**CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET**

<b>Product name</b>	C1q, Human, Natural	<b>Expiry date</b>	-
<b>Catalog number</b>	HC2143	<b>Activity</b>	C1qH50 Units/mg
<b>Lot number</b>	-	<b>Amount</b>	~1 mg
<b>Volume</b>	-	<b>Concentration</b>	~1 mg/ml
<b>Formulation</b>	10 mM HEPES, 300 mM NaCl pH 7.2	<b>Purification</b>	N.A.
<b>Host Species</b>	Human, isolated from healthy blood donors	<b>Purity</b>	≥90%
<b>Endotoxin level</b>	<24 EU/mg		
<b>Storage</b>	-70°C		

**Application notes**

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #								
Yes					•	•		•
No								
N.D.	•	•	•	•			•	

N.D. = Not Determined; IHC = Immuno histochemistry; F = Frozen sections; P = Paraffin sections; IF = Immuno Fluorescence; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IP = Immuno Precipitation; W = Western blot

Human blood test results	
HBsAg	negative
HBV-DNA	negative
HCV-RNA	negative
Anti-HCV	negative
HEV-RNA	negative
Anti-HIV-I and II	negative
HIV-RNA	negative
Anti-TP	negative

The blood donors have been tested and found negative for various viruses

- FS: The biological activity of C1q is defined as the amount of C1q required to yield 50% lysis of sensitized sheep erythrocytes (EA). For functional studies, in vitro dilutions have to be optimized in user's experimental setting.

**General Information**
**Description**

The complement system plays important roles in both innate and adaptive immune response and can produce an inflammatory and protective reaction to challenges from pathogens before an adaptive response can occur. There are three pathways of complement activation. The classical pathway is initiated by Immune complexes; the lectin pathway by surface bound mannan binding lectin; and the AP by all the surfaces that are not specifically protected against it. Each generates a C3 convertase, a serine protease that cleaves the central complement protein C3, and generates the major cleavage fragment C3b. The C3 and C5 convertases are enzymatic complexes that initiate and amplify the activity of the complement pathways and ultimately generate the cytolytic MAC.

C1q forms together with C1r and C1s the C1 macromolecule, the first component of the classical complement pathway. C1q is complex of 18 polypeptide chains of three different types (A,B,C; resp. 29,27,23 kDa). Interaction of immune complexes with C1q induces a conformational change within the C1 complex, which results in activation of the classical pathway. C1q functions as recognition unit by binding to the heavy chain of IgG or IgM (Fc gamma and Fc micro) provided that the immunoglobulins are bound to their antigen. Furthermore, C1q can also recognize molecular patterns associated with pathogens and it can bind to apoptotic blebs, where it activates the classical complement pathway and mediates phagocytosis. C1q is predominantly produced by macrophages but also by follicular dendritic cells, interdigitating cells and cells of the monocyte-macrophage lineage. C1q deficiency has a profound effect on host defense and clearance of immune complexes. Absence of C1q may cause autoimmunity by impairment of the clearance of apoptotic cells. Inherited C1q deficiency is also associated with the development of systemic lupus erythematosus (SLE). Furthermore recent studies show involvement of C1q in non-complement cellular processes, including neovascularization during pregnancy, coagulation, tissue repair, cancer and functioning of the neurological synapse.

**Storage&stability** Product should be stored at  $-70^{\circ}\text{C}$ . Repeated freeze and thaw cycles will cause loss of activity. Use C1q protein within 24 hours after thawing and keep on ice. Remainder amounts should be aliquoted and immediately re-frozen for future use. Aliquots should never be thawed more than once. Under recommended storage conditions, product is stable for at least one year.

**Precautions** For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.

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We hereby certify that the above-stated information is correct and that this product has been successfully tested by the Quality Control Department. This product was released for sale according to the existing specifications. This document has been produced electronically and is valid without a signature.

Approved by Manager of QC  
Brenda Teunissen

Date  
24/09/2019

Do you have any questions or comments regarding this product? Please contact us via [support@hycultbiotech.com](mailto:support@hycultbiotech.com).