Name:	**C1q-Dpl**
Catalog Number:	**A300**
Sizes Available:	1.0 mL/vial
Concentration:	>50 mg protein/mL (see Certificate of Analysis for actual conc.)
Form:	Frozen liquid
Activity:	>80% versus normal human serum after reconstitution with C1q
Purity:	No C1q detectable by immunodiffusion
Buffer:	10 mM sodium phosphate, 145 mM NaCl, pH 7.3
Preservative:	None, 0.22 µm filtered
Storage:	-70°C or below. Minimize freeze/thaw cycles.
Source:	Normal human serum (shown by certified tests to be negative for HBsAg and for antibodies to HCV, HIV-1 and HIV-II).
Precautions:	Use normal precautions for handling human blood products.
Origin:	Manufactured in the USA.

General Description

Normal human serum depleted of complement C1q protein by immunoaffinity chromatography. The product is tested for the absence of C1q by functional assays for classical pathway activity and for C1q protein by double immunodiffusion. C1q-Dpl is certified to possess a functional alternative pathway for complement activation (Morgan, B.P. (2000); Dodds, A.W. and Sim, R.B. (1997)). A functional classical pathway can be reconstituted by addition of purified C1q protein (70 µg/mL) indicating that all other complement components necessary for classical pathway activation are present and active. The absence of C1q does not prevent complement activation by the lectin and alternative pathways on appropriate surfaces.

Physical Characteristics

C1q-Dpl is supplied as a clear, straw-colored liquid containing all proteins of normal human serum except complement component C1q.

Function

The depleted serum is tested for remaining classical pathway activity by hemolytic assays using antibody-sensitized sheep erythrocytes (CompTech #B200) and for alternative pathway function using rabbit erythrocytes (CompTech #B300). The depleted serum is reconstituted with 70 µg/mL C1q (CompTech #A099) and retested to verify that a functional classical pathway is restored. The Certificate of Analysis provided with each lot gives a description of the assays and specific titers for the depleted and reconstituted sera compared to normal human serum.

Assays

The unit of classical pathway activity is the CH50. A similar unit, the C1qH50, is used to quantitate the activity of C1q and C1q-Dpl. A C1qH50 unit is the amount of functional C1q needed to lyse 50% of 3×10^7 EA cells (antibody- sensitized sheep erythrocytes (CompTech #B200)) when that amount of C1q (CompTech #A099) is incubated with the recommended volume of C1q-Dpl in GVB^{++} (CompTech #B100) in a total volume of 500 µL for 30 min at 37°C. This amount of C1q indicates the sensitivity

of the assay for C1q which is typically about 2 ng C1q with 5 µL C1q-Dpl. See the Certificate of Analysis for lot specific values.

Alternative pathway titers are performed to document that this pathway of complement activation is fully functional in C1q-Dpl. Lectin pathway activity is not tested.

Applications

C1q-Dpl is used to assay C1q hemolytic activity in samples and to supply an alternative pathway activating system that is incapable of activating the classical pathway of complement.

Precautions/Toxicity/Hazards

The source is human serum, therefore precautions appropriate for handling any blood-derived product must be used even though the source was shown by certified tests to be negative for HBsAg and for antibodies to HCV, HIV-1 and HIV-II.

Hazard Code: B

MSDS available upon request.

References

Dodds, A.W. and Sim, R.B. editors (1997) Complement. A Practical Approach (ISBN 019963539) Oxford University Press, Oxford.

Morgan, B.P. ed. (2000) Complement Methods and Protocols. (ISBN 0-89603-654-5) Humana Press, Inc., Totowa, New Jersey.

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