IBGRL RESEARCH PRODUCTS

NHS Blood and Transplant

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Antigen	Complement C3c
Clone	BGRL 16
Product Code	9496
Immunoglobulin Class	Mouse Ig1, kappa light chain

Antigen Description and Distribution

Complement is the name given to a complex series of some 20 proteins which, along with blood clotting, fibrinolysis and kinin formation, forms one of the triggered enzyme systems found in plasma. These systems characteristically produce a rapid, highly amplified response to a trigger stimulus mediated by a cascade phenomenon where the product of one reaction is the enzymic catalyst of the next. The most abundant complement component is C3, which has molecular weight of 195kDa and is present in plasma at a concentration of around 1.2mg/ml. C3 plays a central role in both classical and alternative complement activation pathways. The C3c component is generated over the course of complement activation, where convertase C4b2a (classical pathway) and convertase C3bBb (alternative pathway) cleave C3 to C3b which is further degraded into C3c. When erythrocytes are treated with a complement binding antibody such as anti-Le^a C3c, C4 and C3d can be demonstrated on the cell surface. People with C3 deficiency are susceptible to bacterial infection and it can be an indicator for some diseases.

Clone

BGRL 16 (F23b) was made in response to intact human erythrocytes coated with C3/C4[1]. In indirect haemagglutination tests, BGRL 16 agglutinates C3c on erythrocytes coated with C3 at low ionic strength by the method of Fruitstone[2] and with C3/C4 using alternative pathway activation by the method of Freedman and Mollison[3]. BGRL 16 reacts with epitope 3 on C3 and has an affinity of 0.67 x 10^{-7} (l/M) for C3c. BGRL 16 does not inhibit the classical activation pathway of complement mediated lysis by using blood group AB red cells sensitized by anti-A or B monoclonal antibodies[4].

References

1. Dobbie D. Brazier D.M. Gardner B. Holburn A.M. (1987) Transfusion 27, 453-459.
2. Fruitstone M.J. (1978) Transfusion 18, 125.
3. Freedman J., Mollison P.L. (1976) Vox Sang 31, 241-57.
4. Mushens R.E. and Bakacs T. (1992) Transfusion 32, 430-434.