Bristol Institute for Transfusion Sciences
Incorporating the
International Blood Group Reference Laboratory

NHS Blood and Transplant

IBGRL RESEARCH PRODUCTS

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Antigen	CD58 (LFA-3)
Clone	BRIC 5
Product Code	9405
Immunoglobulin Class	Mouse IgG2a, kappa light chain

Antigen Description and Distribution

CD58, or LFA3, is a membrane glycoprotein of 55kDa to 70kDa and is mapped to chromosome 1p13. It occurs in two forms, one transmembrane with a cytoplasmic domain, the other form anchored in the membrane via a glycosylphosphatidylinositol tail. The complete amino acid sequence of both forms has been deduced from cDNA. It is heavily N-glycosylated. CD58 is a cell adhesion molecule which plays a critical role in facilitation of antigen specific recognition through interaction with CD2 on T lymphocytes and natural killer cells[1]. It is a member of the immunoglobulin superfamily of molecules. CD58 has a wide tissue distribution, being present on erythrocytes, platelets, monocytes, a subset of lymphocytes, bone marrow cells, fibroblasts, epithelium and endothelium cells[2]. There are approximately 5000 CD58 molecules on each erythrocyte. There is reduced expression of CD58 on cells of individuals with paroxysmal nocturnal haemoglobinuria.

Clone

BRIC 5 was made in response to human erythrocytes. It inhibits human T cell rosette formation and blocks T cell proliferation stimulated by activated T cells. It reacts with epitope cluster 1 defined by the fifth leucocyte workshop[3] and will cross block TS2/9[4]. It has a functional binding affinity to erythrocytes of $4 \times 10^{8} M^{-1}$. BRIC 5 binds to a broadly migrating component of 40-65 KDa on an immunoblot of non-reduced erythrocyte membranes. BRIC 5 is an indirect haemagglutinin. The erythrocyte antigen is pronase, trypsin, chymotrypsin and AET sensitive. CD58 was clustered for the first time at the fourth leucocyte workshop[2] by three antibodies including BRIC 5. BRIC 5 was also submitted to the fifth leucocyte workshop[5].

References

1. Makgoba M.W., *et al*, (1989) Immunology Today **10** 417-422 (Review)
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3. Klickstein *et al.*, (1993) Proceedings of the fifth workshop and conference on white cell differentiation antigens, Boston, vol. 2 1475-1476.
4. Anstee DJ *et al*. (1991) Immunology, **74**: 197-205.
5. Schlossman SF (ed) *et al.,* (1993) Proceedings of the fifth workshop and conference on white cell differentiation antigens, Boston, Oxford University Press 1995.