

**International Blood Group
Reference Laboratory**500 North Bristol Park
Northway
Filton
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Antigen	CD44
Clone	BRIC 235
Product Code	9407
Immunoglobulin Class	Mouse IgG2b, kappa light chain

**Protein Development
and Production Unit****Tel:** +44 (0)117 921 7500**Fax:** +44 (0)117 912 5796**Website:** <http://ibgri.blood.co.uk>**Email:** enquiries.IBGRL@nhsbt.nhs.uk**Antigen Description and Distribution**

CD44 (also known as Pgp-1, ECMR III, Hermes antigen, p80¹, H-CAM) is a cell membrane glycoprotein of apparent molecular weight 85 kDa. The full amino acid sequence has been deduced from cDNA. It is heavily glycosylated with both N- and O- glycans. The extracellular part of CD44 comprises an N- terminal disulphide bonded domain and an O- glycosylated domain. CD44 carries the In^a and In^b blood group antigens². There is a strong association between CD44 and the cytoskeleton. CD44 is thought to be involved in mediating cell:cell adhesion particularly lymphocyte-endothelial cell interactions important for lymphocyte migration from blood to lymph nodes and mucosal associated lymph organs. CD44 is a member of the hyaladherin family of hyaluronan-binding proteins, with a structure similar to selectins, and is the principal cell surface receptor for Hyaluronate³. Antibodies in CD44 may facilitate haemopoietic engraftment⁴. CD44 also functions as an adhesion, hyaluronan, fibronectin, osteopontin and MIP-1 β receptor and as a co-stimulatory molecule. CD44 is found on a broad range of haemopoietic cells such as lymphoid cells, myeloid cells, fibroblasts, endothelial cells, epithelial cells, erythroid cells and the nervous system, but not platelets⁵. It is found on brain, heart, liver, thymus, kidney and colon epithelium. CD44 has been mapped to chromosome 11p13. There are approximately 10,000 CD44 molecules per erythrocyte.

Clone

BRIC 235 was made in response to the HEL erythroleukaemia cell line. Epitope mapping correlates BRIC 235 with the Hermes 1 group of CD44 antibodies, which is equivalent to epitope 2⁶, as defined by the Vth Leucocyte workshop⁷. Certain antibodies in this group, including BRIC 235, inhibit binding of hyaluronan to CD44⁸. This epitope appears to be associated with the N-terminal region of CD44. BRIC 235 has a functional binding affinity to erythrocytes of 3.5 x 10⁸M⁻¹. BRIC 235 reacts by immunoblotting with a component of Mr 80kDa in non-reduced erythrocyte membranes. BRIC 235 is a direct haemagglutinin. The erythrocyte antigen is pronase, trypsin, chymotrypsin and AET (2- aminoisothiuronium bromide) sensitive. BRIC 235 has been used to investigate the key membrane protein changes during *in vitro* erythropoiesis of Protein 4.2 cells⁹. BRIC 235 has been used by immunoblotting of red cell membrane proteins to reveal the membrane alterations in the absence of RHCE¹⁰.

References

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