

**International Blood Group  
Reference Laboratory**500 North Bristol Park  
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<b>Antigen</b>	CD44
<b>Clone</b>	BRIC 222
<b>Product Code</b>	9406
<b>Immunoglobulin Class</b>	Mouse IgG1, kappa light chain

**Protein Development  
and Production Unit**

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CD44 (also known as Pgp-1, ECMR III, Hermes antigen, p80<sup>1</sup>, H- CAM) is a cell membrane glycoprotein of apparent molecular weight 80 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<sup>a</sup> and In<sup>b</sup> blood group antigens<sup>2</sup>. 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 Hyaluronate<sup>3</sup>. Antibodies in CD44 may facilitate haemopoietic engraftment<sup>4</sup>. CD44 also functions as an adhesion, hyaluronan, fibronectin, osteopontin and MIP-1 $\beta$  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 platelets<sup>5</sup>. 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 222 was made in response to human erythrocytes. BRIC 222 reacts by immunoblotting with a component of Mr 80kDa in nonreduced erythrocyte membranes. Epitope mapping correlates BRIC 222 with the Hermes 2 group of CD44 antibodies which is equivalent to epitope 1<sup>6</sup>, as defined by the Vth Leucocyte workshop<sup>7</sup>. This epitope appears to be associated with the N-terminal region of CD44. It inhibits T cell:erythrocyte rosette formation. It has a functional binding affinity to erythrocytes of 3.8 x 10<sup>8</sup>M<sup>-1</sup>. BRIC 222 is a direct haemagglutinin. The erythrocyte antigen is pronase, trypsin, chymotrypsin and AET (2-aminoisothiuronium bromide) sensitive. BRIC 222 has been used to investigate the key membrane protein changes during *in vitro* erythropoiesis of Protein 4.2 cells<sup>8</sup>.

**References**

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