

Antigen	CD44
Clone	BRIC 235
Product Code	9407
Immunoglobulin Class	Mouse IgG2b, kappa light chain

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 $3.5 \times 10^8 \text{M}^{-1}$. 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.

References

1. Haynes B.F., *et al*, (1989) *Immunology Today* **10** 423-428 (Review).
2. Spring F.A., *et al*, (1988) *Immunol.* **64**, 37-43.
3. Arufo A., *et al*, (1990) *Cell* **61** 1303-1313.
4. Sandmaier B.M. *et al* (1990) *Blood* **76**, 630-635.
5. Stoll M., *et al*, (1989) in *Leucocyte Typing IV; White Cell Differentiation Antigens* Ed. W. Knapp *et al* Oxford University Press pp 619-622.
6. Anstee DJ *et al*. (1991) *Immunology*, **74**: 197-205.
7. Spring *et al*. (1993) *Proceedings of the fifth workshop and conference on white cell differentiation antigens*, Boston, vol. 2 p1738-1740.
8. Liao H, Telen M.J. Haynes B.F. (1993) *Proceedings of the fifth workshop and conference on white cell differentiation antigens*, Boston, vol. 2 p1735-7.