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Antigen	Human Blood Group N (ISBT No.2002)
Clone	BRIC 157
Product Code	9401
Immunoglobulin Class	Mouse IgG1, kappa light chain

Antigen Description and Distribution

The blood group N antigen is expressed on the erythrocyte sialoglycoproteins Glycophorin A (GPA, where it is polymorphic, CD 235a) and Glycophorin B (GPB, CD 235b). The complete amino acid sequence of both of these highly homologous membrane glycoproteins is known. The nature of the amino acids at positions 1 and 5 (leucine and glutamic acid respectively) defines the N antigen on both GPA and GPB[1]. Glycophorins A and B are heavily glycosylated with numerous O- glycans containing sialic acid. The reactivity of some anti-N reagents is affected by the degree of sialylation of the antigen[2]. The antigen is found on erythroid cells and K562 and HEL erythroleukaemia cell lines. All normal erythrocytes express N antigen on GPB: MN and NN erythrocytes also express N antigen on GPA. There are approximately 2-10 x 10^5 GPA and 8-25 x 10^4 GPB molecules per erythrocyte. Rare individuals lacking GPA and GPB are known[2]. Approximately 28% of English people lack N antigen on GPA.

Clone

BRIC 157 was made in response to a Triton X-100 soluble fraction of erythrocyte membranes. Its reaction with erythrocytes is unaffected by the pre-treatment of erythrocytes with either sialidase, dimethylsuberimidate (DMS) or formaldehyde. The antibody has been used together with anti-M (6A7) to develop a mutagenesis assay capable of quantitating the level of mutant M-N- red cells in normal and pathological samples[3]. BRIC 157 (anti-N formalin resistant epitope) reacts well with erythrocytes in a fixed specimen of MN blood group bone marrow.

References

1. Reid ME, Lomas-Francis C. (1997) The blood group antigen facts book. Academic Press, London.
2. Anstee D.J. (1990) Vox Sang. **58**: 1-20 (Review).
3. Langlois R.G. *et al* (1990) Cytometry **11** 513-521.