

**International Blood Group
Reference Laboratory**

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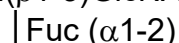
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Antigen	Human Blood Group A
Clone	BRIC 145
Product Code	9434
Immunoglobulin Class	Mouse IgG1, kappa light chain

Antigen Description and Distribution

The histo-blood group A antigen is defined by the carbohydrate structure at the non-reducing termini of oligosaccharide chains of glycoproteins and glycolipids. Carbohydrate chains are synthesized by the action of α -N-acetyl-D-galactosaminyl-transferase, which catalyzes the transfer of GalNAc monosaccharide to an acceptor substrate called the H antigen. The structure of the A antigen is GalNAc(α 1-3)Gal(β 1-3)GlcNAc-R



ABO, of which the A antigen is part of, is the most important blood group system from the clinical blood transfusion perspective. Approximate frequencies of ABO phenotypes in southern England are as follows: O 43%, A 45%, B 8% and AB 4%; but frequencies vary throughout the world. The A antigen is widely distributed on erythrocytes, cells and tissues, and is present, in soluble form, in body fluids of A positive individuals. About 20% of group A people secrete no A substance because their secretions contain no H antigen although they are still blood group A because the H antigen is still present on their erythrocytes. In a rare phenotype, the Bombay phenotype, no H is present in secretions or on the erythrocytes and consequently no A or B are present. The A antigen is divided into 2 main subgroups, A₁ and A₂.

Clone

BRIC 145 was made in response to immunisation with A active ovarian cyst glycoprotein. BRIC 145 agglutinates blood group A erythrocytes. BRIC 145 has been used to measure the expression of blood group A antigens on platelets¹. BRIC 145 has been used to measure soluble ABO blood group substance in fresh-frozen plasma².

Further Reading

1. Curtis B.R *et al.* (2000) Blood group A and B antigens are strongly expressed on platelets of some individuals. *Blood* 96: 1574-1581.
2. Achermann F.J. *et al.* (2005) Soluble type A substance in fresh-frozen plasma as a function of ABO and Secretor genotypes and Lewis phenotype. *Transfusion and Apheresis Science* 32 255–262.
3. Anstee DJ, Cartron J-P. (1997) Towards an understanding of the red cell surface. In: Garratty G, ed. *Applications of molecular biology to transfusion medicine*:17-49. American Association of Blood Banks, Bethesda, MD.
4. Daniels G. (2013) *Human blood groups* (third Ed.). Blackwell Publishing Ltd.
5. Issitt PD, Anstee DJ (1998) *Applied blood group serology*. 4th edn. Montgomery Scientific Publications, Durham, NC.
6. Mollison PL, Engelfriet CP, Contreras M. (1997) *Blood Transfusion in clinical medicine*. 10th edn. Blackwell Science, Oxford.
7. Reid ME, Lomas-Francis C. and Olsson M. (2012) *The blood group antigen facts book*. Academic Press, London, Third Ed.