IBGRL RESEARCH PRODUCTS

NHS Blood and Transplant

International Blood Group Reference Laboratory
500 North Bristol Park
Northway
Filton
Bristol
BS34 7QH

Protein Development and Production Unit
Tel: +44 (0)117 921 7500
Fax: +44 (0)117 912 5796
Website: http://ibgrl.blood.co.uk
Email: enquiries.IBGRL@nhsbt.nhs.uk

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(α1-3)Gal(β1-3)GlcNAc-R

Fuc (α1-2)

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, A_1 and A_2.

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 platelets[1]. BRIC 145 has been used to measure soluble ABO blood group substance in fresh-frozen plasma[2].

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.