

Antigen	Blood Group B	NHS Blood & Transplant 500 North Bristol Park Northway Filton Bristol BS34 7QH Tel: +44 (0)117 921 7200 Fax: +44 (0)117 912 5796 Web: http://ibgri.blood.co.uk
Clone	BRIC 250	
Product Code	9470	
Immunoglobulin Class	Mouse IgM Kappa	

Antigen Description and Distribution

The histo-blood group B 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 -D-galactosyltransferase, which catalyzes the transfer of D-galactose monosaccharide to an acceptor substrate called the H antigen.

The structure of the B antigen is $\text{Gal}(\alpha 1-3)\text{Gal}(\beta 1-3)\text{GlcNAc-R}$
| Fuc ($\alpha 1-2$)

ABO, of which the B 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 B antigen is widely distributed on erythrocytes, cells and tissues, and is present, in soluble form, in body fluids of B positive individuals. About 20% of group B people secrete no B substance because their secretions contain no H antigen although they are still blood group B 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.

Clone

BRIC 250 was made in response to immunisation with blood group B ovarian cyst fluid. BRIC 250 directly agglutinates untreated blood group B erythrocytes. BRIC 250 gives good detection of weak B phenotypes and does not react with acquired B. BRIC 250 does not auto-immune precipitate in the cold.

Further Reading

1. 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.
2. 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.
3. Daniels G. (2013) *Human blood groups* (third Ed.). Blackwell Publishing Ltd.
4. Issitt PD, Anstee DJ (1998) *Applied blood group serology*. 4th edn. Montgomery Scientific Publications, Durham, NC.
5. Mollison PL, Engelfriet CP, Contreras M. (1997) *Blood Transfusion in clinical medicine*. 10th edn. Blackwell Science, Oxford.
6. Reid ME, Lomas-Francis C. and Olsson M. (2012) *The blood group antigen facts book*. Academic Press, London, Third Ed.