

**International Blood Group
Reference Laboratory**500 North Bristol Park
Northway
Filton
Bristol
BS34 7QH**Antigen** Human Blood Group M (ISBT No.2001)**Clone** 6A7**Product Code** 9412**Immunoglobulin Class** Mouse IgG1, kappa light chain**Protein Development
and Production Unit****Tel:** +44 (0)117 921 7500**Fax:** +44 (0)117 912 5796**Website:** <http://ibgri.blood.co.uk>**Email:** enquiries.IBGRL@nhsbt.nhs.uk**Antigen Description and Distribution**

The blood group M antigen is a polymorphic antigen expressed on the major erythrocyte sialoglycoprotein, Glycophorin A (GPA, CD 235a). The complete amino acid sequence and sites of glycosylation of GPA are known. The M antigen is defined by serine and glycine at positions 1 and 5 respectively of GPA¹. Glycophorin A is heavily glycosylated with numerous O- glycans containing sialic acid². It is found on erythroid cells and the HEL erythroleukaemia cell line. There are approximately $2-10 \times 10^5$ GPA molecules per erythrocyte. Rare individuals lacking GPA are known². Approximately 78% of English people are M positive.

Clone

6A7 was made in response to human erythrocytes³. The epitope recognised by 6A7 is resistant to treatment with dimethylsuberimidate (DMS) or formaldehyde and so the antibody can be used in flow cytometry with DMS or formaldehyde-fixed erythrocytes. The antibody has been used together with anti-N (BRIC 157) to develop a mutagenesis assay capable of quantitating the level of mutant M-N- red cells in normal and pathological samples⁴. 6A7 (anti-M formalin resistant epitope) reacts 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. Bigbee WL *et al.* (1983) *Mol. Immunol.* **20**: 1353-1362.
4. Langlois R.G. *et al* (1990) *Cytometry* **11** 513-521.