

G.L. Daniels, D.J. Anstee
 J.P. Cartron, W. Dahr, S. Henry
 P.D. Issitt, J. Jørgensen, W.J. Judd
 L. Kornstad, C. Levene
 C. Lomas-Francis, A. Lubenko
 D. Mallory, J.M. Moulds
 J.J. Moulds, Y. Okubo
 M. Overbeeke, M.E. Reid, P. Rouger
 S. Seidl, P. Sistonen, S. Wendel
 T. Zelinski

Terminology for Red Cell Surface Antigens

Makuhari Report

(For affiliations see Appendix)

The Working Party met at Makuhari Messe, Japan on 31 March 1996. A few changes to the current classification, documented in Blood Group Terminology 1995 [1], were agreed and these are described below.

Blood Group Systems

002, the MNS System

Two new antigens have been added, both of very high incidence (table 1). Absence of MNS39 (ENEP) is associated with a glycoprotein A substitution of Ala-65 to Pro and with abnormal expression of W_r^b [2]. MNS40 (ENEH) is absent from glycoprotein A of the phenotype Mi.I (GP.Vw); the glycoprotein A has a Thr-28 to Met substitution and expresses MNS9 (Vw) antigen [3, 4]. For consistency, the name of MNS29 has been changed from En^aKT to ENKT.

004, the Rh System

One new antigen has been added, a low incidence antigen BARC (table 1). BARC is produced by most $D^{VI}Ce$ haplotypes, but is not produced by $D^{VI}cE$ haplotypes [5, 6]. Family evidence (lod score of 4.77 at $\Theta = 0.00$) has confirmed that BARC belongs to the Rh system [7] and BARC has been numbered RH52.

006, the Kell System

One new antigen has been added (table 1). An inherited low incidence antigen VLAN was shown by monoclonal antibody-specific immobilization of erythrocyte antigen

Table 1. New antigens assigned to blood group systems

System	Number	Symbol	Previous number
002 MNS	002039	ENEP	
	002040	ENEH	
004 RH	004052	BARC	
006 KEL	006025	VLAN	
010 DI	010005	W_d^a	700030
	010006	R_b^a	700027
	010007	WARR	700055

(MAIEA) analysis to be located on the Kell glycoprotein and was given the number KEL25 [8].

010, the Diego System

Three low incidence antigens from the 700 series have joined the Diego system because they are associated with mutations in the gene encoding band 3, the anion transporter (table 1). There was no evidence of recombination between the gene encoding W_d^a (DI5, previously 700030) and that encoding band 3 (lod score 8.13 at $\Theta = 0.00$) by family linkage studies [9]. Subsequently, DNA analysis of the same families segregating for W_d^a [10] and in two other unrelated propositi [11, 12] revealed that W_d^a expression is associated with a missense mutation in the band 3 gene, encoding a Val-557 to Met substitution. Heterozygosity for a missense mutation encoding a Pro-548 to Leu substitution in band 3 was detected in two unrelated $R_b(a^+)$ individuals; so R_b^a (previously

700027) has become DI6 [11, 12]. Twenty WARR+ members of the Warrior family had a missense mutation encoding a Thr-552 to Ile substitution in band 3, and WARR (previously 700055) has become DI7 [12]. All three amino acid substitutions are within the third extracellular loop of band 3.

Collections

There are no changes to the collections except that the symbol for collection 209 is changed from GLOBO to GLOB in order to conform with the four-letter symbol rule.

701 Series

700027, 700030, and 700055 have joined the Diego system and so these numbers are now obsolete.

901 Series

There is one new antigen: 901015, ABTI. Individuals lacking this antigen of very high incidence are present in an Israeli Arab family and two members of the family have anti-ABTI in their serum [13].

Minor Corrections to 1995 Monograph [1]

Livesay (700028) should be Livesey. RIV (RH45) should be Riv.

Applications for ISBT Numbers

The 1995 report [1] should be consulted for the criteria and procedures required for acquisition of ISBT numbers. The necessary forms will be found in appendices 1–3 of the report [1]. The following changes must be made. Appendix 1: add RH52, KEL25, DI5, DI6 and DI7; delete 700027, 700030, and 700055. Appendix 2: add MNS39, MNS40, and 901015.

Working Party Membership

For addresses and fax numbers of members of the Working Party the 1995 report [1] should be consulted. Three new members joined the Working Party at the 1996 meeting:

Dr Stephen Henry, Glycoscience Research Centre, Auckland Institute of Technology, Private Bag 92006, Auckland 1020, New Zealand, Fax: +64 9 307 99 73.

Prof. W. John Judd, Department of Pathology, University Hospitals UH-2G332, 1500 E Medical Center Drive, Ann Arbor, MI 48109–0054, USA. Fax: +1 313 763 4095.

Dr JoAnn M. Moulds, UT-Houston Medical School, 6431 Fannin, Room 5.270, Houston, Tex 77030, USA. Fax: +1 713 794 4230.

Other changes are:

Dr Cyril Levene, Reference Laboratory for Immunohaematology and Blood Groups, National Blood Services Centre, Magen David Adom, Tel Hshomer 52621, Israel. Fax: +972 3 5351728.

Ms. Christine Lomas-Francis, Fax: +1 512 491 7993.

Ms Delores Mallory, American Red Cross, Musser Blood Center, Technical Services, 700 Spring Garden Street, Philadelphia, PA 19123–3594, USA. Fax: +1 215 451 2538.

Appendix

G. L. Daniels: Bristol Institute for Transfusion Sciences, Bristol, UK; D. J. Anstee: International Blood Group Reference Laboratory, Bristol, UK; J. P. Cartron: Institut National de la Transfusion Sanguine, Paris, France; W. Dahr: Scientific Consultation and Translations, Bergisch Gladbach, Germany; S. Henry: Auckland Institute of Technology, Auckland, New Zealand; P. D. Issitt: Duke University Medical Center, Durham N.C., USA; J. Jørgensen: University Hospital, Skejby, Århus, Denmark; W. J. Judd: University Hospitals, Ann Arbor, Mich., USA; L. Kornstad: Statens Institute for Folkeshelse, Oslo, Norway; C. Levene: Magen David Adom, Tel Hashomer, Israel; C. Lomas-Francis: Austin, Tex., USA; A. Lubenko: Yorkshire Blood Transfusion Service, Leeds, UK; D. Mallory: American Red Cross, Philadelphia, Pa., USA; J. J. Moulds: Gamma Biologicals Inc., Houston, Tex., USA; J. M. Moulds: UT Houston Medical School, Houston, Tex., USA; Y. Okubo: Osaka Red Cross Blood Center, Osaka, Japan; M. A. M. Overbeeke: Central Laboratory of the Netherlands Red Cross Blood Transfusion Service, Amsterdam, The Netherlands; M. E. Reid: New York Blood Center, New York, N. Y., USA; P. Rouger: Centre National de Référence pour les Groupes Sanguins, Paris, France; S. Seidl: Blutspendedienst Hessen, Frankfurt, Germany; P. Sistonen: Finnish Red Cross Blood Transfusion Service, Helsinki, Finland; S. Wendel: Hospital Sirio-Libanés, São Paulo, Brazil; T. Zelinski: Rh Laboratory, Winnipeg, Canada.

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