



Blood Groups, Platelet Antigens, and Granulocyte Antigens Quiz

by Laura King, MA, ELS

Directions: Edit the following sentences based on your understanding of section 15.1 of the *AMA Manual of Style*.

1. With the Lewis system, the distribution of Lea-b+ was similar among the ethnic groups: Fya-b- was discovered in 2 donors, Jka-b- in 7 donors, and K+k- in 3 donors.

ANSWER:

With the Lewis system, the distribution of Le(a-b+) was similar among the ethnic groups: Fy(a-b-) was discovered in 2 donors, Jk(a-b-) in 7 donors, and K+k- in 3 donors.

Editor's Note: In phenotypic expressions—terms that describe an individual's blood group or type—the presence or absence of an antigen is often indicated by a plus or minus sign. The plus and minus signs are set on the line (not superscript or subscript) in roman type (§15.1.1, *Blood Groups*, pp 536-543 in print).

2. Rh(null) is a rare autosomal recessive disorder, and Rh(null) of the regulator type may result from mutation of the RhAG gene.

ANSWER:

Rh_{null} is a rare autosomal recessive disorder, and Rh_{null} of the regulator type may result from mutation of the RHAG gene.

Editor's Note: Terms for Rh phenotypes, which do not feature plus and minus signs, are also in use. The correct format for Rh_{null} is to set null subscript. As with *International Standard Gene Nomenclature*, *International Society of Blood Transfusion (ISBT)* gene terms are italicized. Traditional blood-group gene symbols often mixed uppercase and lowercase. However, symbols recommended by ISBT, like those of the *Human Genome Organisation (HUGO)*, use all capital letters. Therefore, in the example, RhAG should be changed to RHAG (§15.1.1, *Blood Groups*, pp 536-543 in print).

3. The ABO blood type B(3) is the most common B subtype in the Chinese population.

ANSWER:

The ABO blood type B₃ is the most common B subtype in the Chinese population.

Editor's Note: Antigen terms use single or dual letters, often with a qualifier that is a letter (usually superscript) or number (subscript or typeset on the line). The A and B antigens use superscript numbers (§15.1.1, *Blood Groups*, pp 536-543 in print).

4. In the MNS blood group system, M+N+S+s+ was the most common and M-N+S+s- the least common phenotype found.

ANSWER:

In the MNS blood group system, M+N+S+s+ was the most common and M-N+S+s- the least common phenotype found.

Editor's Note: Traditional blood group system nomenclature is typically used in medical publications. It comprises several approaches, and, therefore, sometimes the same entity (eg, a particular erythrocyte antigen) can be expressed by more than 1 term. Editors generally should follow author preference. In this example, either MNS blood group system or MNSs blood group system is correct. The phenotypes M+N+S+s+ and M-N+S+s- are typeset correctly (§15.1.1, *Blood Groups*, pp 536-543 in print).



5. The investigators studied 5 anti-RhD positive and 5 anti-RhD negative patients.

ANSWER:

The investigators studied 5 anti-Rh D-positive and 5 anti-Rh D-negative patients.

Editor's Note: Terms such as O+ (“O positive”), A+, and AB– are common parlance as shorthand for blood of the ABO system and its Rh specificity. However, in scientific articles, use standard terms that specifically indicate Rh status, such as O Rh-positive or O Rh+, or more specific designations of phenotype, such as group B, D-negative or group A, Rh D-positive. In this example, a space is needed between Rh and D and a hyphen between D and positive and negative (§15.1.1, Blood Groups, pp 536-543 in print).

6. Heterozygous loss-of-function mutations in the *In(Lu)* gene result in the dominant In(Lu) blood phenotype.

ANSWER:

Heterozygous loss-of-function mutations in the *INLU* gene result in the dominant In(Lu) blood phenotype.

Editor's Note: Gene symbols expressed according to ISBT or HUGO recommendations are preferred to traditional symbols. Therefore, the traditional symbol for the Lutheran inhibitor gene, In(Lu), should be changed to the standard form, INLU. In(Lu) is the correct symbol for the blood phenotype (§15.1.1, Blood Groups, pp 536-543 in print).

7. In the HNA-1 system, the FCGR3B*1 (HNA-1A) allele frequency was twice that of FCGR3B*2 (HNA-1B) in most of the indigenous tribes.

ANSWER:

In the HNA-1 system, the *FCGR3B*1* (HNA-1a) allele frequency was twice that of *FCGR3B*2* (HNA-1b) in most of the indigenous tribes.

Editor's Note: The Granulocyte Antigen Working Party of the ISBT has formulated rules for well-defined human neutrophil antigens (HNAs). These rules dictate the use of lowercase letters in the antigens HNA-1a, HNA-1b, and so on. In addition, alleles (eg, *FCGR3B*1* and *FCGR3B*2*) should be italicized (§15.1.3, Granulocyte Antigens, p 544 in print).

8. All Jk(a+(w)b–) and Jk(a+(w)b+) index samples were homozygous or heterozygous for an altered JK*01 allele carrying 130G>A (Glu44Lys).

ANSWER:

All Jk(a+(w)b–) and Jk(a+(w)b+) index samples were homozygous or heterozygous for an altered *JK*01* allele carrying 130G>A (Glu44Lys).

Editor's Note: In phenotypic expressions, a superscript w can indicate a weak reaction. In this example, the w should be set superscript and the allele *JK*01* should be italicized (§15.1.1, Blood Groups, pp 536-543 in print).

9. Expression of glycoprotein IIIa (cluster of differentiation designation of glycoprotein 61), P-selectin (cluster of differentiation designation of glycoprotein 62P), and tissue factor (cluster of differentiation designation of glycoprotein 142) was assessed on platelet-derived microparticles.

ANSWER:

Expression of glycoprotein IIIa (CD61), P-selectin (CD62P), and tissue factor (CD142) was assessed on platelet-derived microparticles.

Editor's Note: The current system of human platelet antigen (HPA) nomenclature, adopted in 1990, is overseen by the Platelet Nomenclature Committee of the ISBT and the International Society on Thrombosis and Haemostasis. As with blood groups, there are platelet antigen systems and specific antigens within those systems. The HPA nomenclature pertains to “all protein alloantigens



expressed on the platelet membrane, except those coded by genes of the major histocompatibility complex (MHC)." We recommend that when used with a number CD should not be expanded to cluster of differentiation. In the example, cluster of differentiation designation of glycoprotein 61 should be changed to CD61, cluster of differentiation designation of glycoprotein 62P to CD62P, and cluster of differentiation designation of glycoprotein 142 to CD142. Glycoprotein can be abbreviated to Gp after expansion at first mention (§15.1.2, Platelet-Specific Antigens, pp 543-544 in print).

10. We treated a 10-hour neonate of O, D+, C+, c-, E-, e+ blood group with severe hemolytic disease due to anti-Rh17 with least incompatible blood typed O, D+, C-, c+, E+, e-.

ANSWER:

We treated a 10-hour neonate of O, D+ C+ c- E- e+ blood group with severe hemolytic disease due to anti-Rh17 with least incompatible blood typed O, D+ C- c+ E+ e-.

Editor's Note: In a blood group profile, elements from different systems may be separated by commas (in the example, note the comma after O). In phenotypic expressions commas do not appear within elements of the same blood group system, for example, D+ C- c+ E+ e- (note that spaces are used) (§15.1.1, Blood Groups, pp 536-543 in print).

