

Unit 6 Objectives: ABO and H Blood Groups

1. Describe the history of the discovery of the ABO system.
2. Briefly describe the membrane structure of the red blood cell.
3. Describe the development of the A and B from birth to adulthood.
4. State the transferase and terminal sugar for each following: A, B and H.
5. Describe how the blood group antigens are "built" on to the RBC membrane.
6. State the alleles of the H system.
7. Name the anti-H lectin.
8. List the ABO blood types in the order (from most to least) amount of H antigen present on the red blood cells.
9. Discuss the reactivity of anti-H antibodies in patient serums and why this may occur.
10. Describe the Bombay phenotype in relation to: H genotype, ABO antigens present on cells, antibodies present in serum and how they can pass ABO antigens on to their children.
11. State the testing performed and expected results of an O_h individual.
12. State the two secretor genes and how they influence the presence or absence of blood group substances in body fluids.
13. Given the A, B, H and Secretor genotype of an state the A, B and H substances that will be present in their secretions.
14. Describe the quantitative and qualitative differences between A^1 and A^2 subgroups and state the percentages of both in the general population.
15. Define lectin.
16. State the name of the plant which produces the lectin which is used to differentiate between the A^1 and A^2 subgroups and list the expected reactions of these cells with the lectin.
17. Describe the problems which may occur due to the presence of anti- A^1 and list the two phenotypes that this antibody is most frequently detected in.
18. Given reactions of A cells tested with anti- A^1 , A^1 and A^2 reagent cells, state the most probable A grouping.
19. Describe problems which may be encountered and their resolution in typing subgroups of A.
20. State the criteria used for classifying subgroups of A weaker than A^2 .
21. Describe the classification of subgroups of B and how they are detected.
22. List the 2 ABO subgroups which are known to give mix-field reaction in the forward typing test.
23. State Landsteiner's Rule.
24. Explain why individuals possess ABO antibodies to the antigens which they do not possess.
25. Describe when ABO antibody production begins including how it quantitatively changes.
26. State the reason reverse typing cannot be performed on infants.
27. State the purpose of using anti-A,B typing reagent and the blood group which produces it.
28. State three reaction characteristics of ABO antibodies.
29. Describe the principle of the forward and reverse typing procedures and address what specifically is being detected in each.
30. Describe in detail the causes of false positive and/or false negative reactions which may occur when performing ABO typing.
31. List 4 problems associated with typing for ABO of antigens on red blood cells (forward type).
32. List 4 problems associated with typing for ABO antibodies (reverse type).
33. Describe the procedures utilized in resolving ABO discrepancies including: first course of action, utilizing lectins, altering test system (incubation at RT or 4C) and using A^2 cells.
34. State the cause of the most commonly encountered ABO discrepancy.
35. Describe the condition known as "acquired B" as it relates to ABO typing
36. State 3 causes of acquired-B.
37. Define the term "mixed field agglutination" and list five situations which may cause it.