

## ABO discrepancy #1 : Answers

Case study by Jim Perkins, M.D. (© 2009)



1. What is the forward ABO type? If that is correct, what anomaly must one explain?

*The forward type is B. If that is correct, one must explain why the patient's plasma agglutinates the group B reverse typing cell.*

2. What is the reverse ABO type? If that is correct, what anomaly must one explain?

*The reverse type is group O (both A and B cells agglutinated by patient plasma). If that is correct, one must explain why the anti-B typing serum agglutinates the patient's RBCs.*

3. Which of these two possibilities did the technologist investigate? What information in the history and type-and-screen results prompted them to do so? What is the cause of this ABO discrepancy? Is any further proof needed?

*The positive antibody screen suggested that the patient has an unexpected antibody. If the first possibility were correct, an unexpected antibody in the patient's plasma could explain the anomalous reaction of the patient's plasma with the group B typing cell. Investigation of the positive antibody screen identified anti-P1. To complete the identification of anti-P1 the patient should be typed for the P1 antigen. If the plasma were non-reactive with a group B reverse typing cell lacking P1 antigen it would demonstrate whether the anti-P1 is indeed the cause of the ABO discrepancy.*

4. Why was the saline/tube IAT chosen for the last antibody identification panel? Can you state this as a general principle of antibody identification?

*A "saline/tube" panel was tested because it includes an "immediate spin" test phase ( room temperature), the same condition at which the serum reacted in the anomalous reverse typing. The pattern of reactivity by this method unequivocally identified anti-P1. This illustrates the general principle that an equivocal pattern of reactivity may be clarified if a method of greater sensitivity can be chosen. Different methods may be more or less sensitive in detecting agglutination by different antibodies and the technique is chosen based on the working hypothesis.*

5. What is the explanation for the variation in reactivity observed in the panels?

*P1 expression varies on different individual's P1 positive RBCs.*

6. How would we select compatible blood for this patient?

*Since the antibody reacts in the pre-warmed test we would regard it as potentially hemolytic and provide cells that typed negative for P1, and which were compatible in a crossmatch using the indirect antiglobulin test.*