

## ABID CASE #17

1. What can be said about the nature of this antibody(ies)?

*This antibody appears to be directed against a high frequency antigen. The initial findings suggest the presence of a warm-reactive autoantibody since the DAT is positive and all donor cells are reactive. However, no autoantibody was recovered in the eluate, prompting further investigation.*

2. What further workup would you do to identify it?

*When receiving a specimen from a different institution, if there is sufficient sample one might first verify the referring institution's results. As in any other antibody identification procedure, the antibody specificity is demonstrated by its reactivity with at least 3 cells having the corresponding antigen, its failure to react with cells lacking the antigen, and lack of the antigen on the RBCs of the individual making the antibody. One approach to an antibody directed against a high frequency antigen is to determine how the antibody reacts with RBCs treated with any of a variety of enzymes and with sulfhydryl-reducing agents; this may allow one to narrow down the possibilities based on the known effects of these agents, thus allowing conservation of some of the laboratory's rare RBC samples. Because several of the more commonly-encountered antibodies directed against high-frequency antigens exhibit "high-titer, low avidity" behavior, many technologists would perform a titration as well. Attention to the patient's ethnic background may also suggest certain possibilities such as anti-Jk<sup>3</sup> or anti-Di<sup>b</sup> in individuals of Pacific island origin or anti-U in individuals of African heritage.*

3. What is the identity of this antibody?

*The antibody appears to be anti-JMH based on the failure of the patient's serum to react with 3 JMH negative RBC samples.*

4. What results prompted the selection of the rare cells in the last panel?

*Failure of previously-reactive RBCs to react after ficin and AET (a sulfhydryl reducing agent) treatment suggested that the antibody might be directed against JMH*

5. What do the titration results demonstrate?

*The titration results are consistent with the "high-titer, low-avidity" phenomenon. That is, the neat serum reacted 2+ at the AHG phase of testing and the strength of reactivity did not diminish when the serum was diluted 8 fold. An example of a typical blood group alloantibody that reacted 2+ on the neat serum would usually be non-reactive or only weakly reactive if diluted 8-fold.*

6. Comment on the difference in reactivity using the "Gamma" AHG versus the Ortho and Immucor reagents.

*The Gamma reagent does not react with IgG4 and will not agglutinate IgG4-coated RBCs. Anti-JMH is typically restricted to the IgG4 subclass.*

7. Is the patient at risk for an immediate hemolytic transfusion reaction? A delayed hemolytic transfusion reaction? How is this related to the answer to the previous question?

*Anti-JMH does not cause immediate or delayed hemolytic transfusion reactions. This correlates with the IgG4 subclass restriction mentioned above, since IgG4-coated RBCs do not activate complement, nor are they destroyed by macrophages.*