AIHA Case #6

1. What antibody(ies) are likely present? Is this allo- or auto-antibody? Is it proven?

The final identification was allo-anti-Fy^a and cold autoantibody as shown by the PEG panel, the cold panel, and the antigen phenotype. The cold autoantibody should be proven by showing that cold autoadsorption removes the reactivity with the Fy^a negative cells in the gel panels. Note that the first panel suggested that the patient had anti-s, but in the follow-up gel panel the serum reacted with all cells. In addition, the patient was shown to express the s antigen, so if the antibody were anti-s it would be an auto-antibody. However, the DAT was negative, which is against an auto-anti-s.

2. Discuss the variation in strength of the antibody(ies) in various test systems.

The patient's serum reacts with most RBCs in the gel system, but the serum is completely non-reactive using a LISS technique. This discrepancy is explained in part by the cold panel, which demonstrates a cold autoantibody (screening cells and auto-control reactive at 4^o). The gel technique is very sensitive to cold autoantibodies, so the reactions in the first two panels likely reflect this auto-antibody.

Note that LISS did not detect the anti-Fy^a , whereas the reaction strengths in the gel panels suggest that gel would have detected this antibody.

The PEG panel both demonstrates the anti-Fy^a and is insensitive to the nuisance cold autoantibody.

This problem demonstrates the utility of having multiple IAT techniques available.

3. How would you select compatible blood for this patient?

Standard protocol would be to crossmatch Fy^a negative RBCs by the routine IAT method (4 drops plasma, 1 drop donor RBC suspension). Many experienced serologist would add an IAT crossmatch using the method that showed the antibody, in this case PEG enhancement.