ABID CASE #22, ANSWERS
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Indian Immunohematology Initiative

1. Develop a hypothesis or hypotheses regarding the identity of this antibody or antibodies.
Anti-Fy^a & anti-S. Note that in "crossing out" anti-K, -Fy^a, and -S, but anti-Fy^a plus anti-S would cause all of the positive reactions.

2. Is any further workup needed to prove it? If so, select cells from the following tables to resolve the problem.
Anti-K needs to be ruled out, and 1 anti-Fy^a "rule-in" cell is needed. Antigen typing also has to be done for any demonstrated antibodies.

Additional cells tested

8RA179		Rh system						Kell						Duffy		Kidd		Xg	Lewis		MNSs				P	Lutheran		Other				
Cell	Rh	D	C	E	c	e	V	K	k	Kp^a	Kp^b	Js^a	Js^b	Fy^a	Fy^b	Jk^a	Jk^b	Xg^a	Le^a	Le^b	S	s	M	N	P1	Lu^a	Lu^b	Typings	Cell	Gell			
1	R1wR1	+	+	0	0	+	0	0	+	0	+	0	+	+	+	+	0	+	0	+	+	0	+	+	+	0	+	C^w	1				
2	R1R1	+	+	0	0	+	0	0	+	0	+	0	+	+	0	0	+	+	0	+	0	+	+	0	0	0	+		2	2+			
3	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	0	+	+	+	0	0	+	0	+	+	0	+s	0	+		3				
4	Ror	+	0	0	+	+	+	0	+	0	+	0	+	0	0	+	+	+	0	0	0	+	0	+	+s	0	+		4				
5	r'r	0	+	0	+	+	0	0	+	0	+	0	+	0	+	+	0	0	+	0	+	0	+	+	0	+	+		5				
6	r"r	0	0	+	+	+	0	0	+	0	+	0	+	+	+	+	+	+	0	+	+	0	+	+	+	0	+		6				
7	rr	0	0	0	+	+	0	+	+	0	+	0	+	0	+	+	0	+	0	0	0	+	+	+	+	0	+		7	0			
8	rr	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	+	0	+	+	0	+	+	0	+		8				
9	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	+	+	+	0	+	+	0	+	0	0	+	+		9				
10	rr	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	+	0	+	0	+	0	+	+	0	+		10				
11	R1R1	+	+	0	0	+	0	+	+	0	+	0	+	0	+	0	+	0	0	+	+	+	+	0	+	0	+		11				
8RB178		Rh system						Kell						Duffy		Kidd		Xg	Lewis		MNSs				P	Lutheran		Other				
Cell	Rh	D	C	E	c	e	V	K	k	Kp^a	Kp^b	Js^a	Js^b	Fy^a	Fy^b	Jk^a	Jk^b	Xg^a	Le^a	Le^b	S	s	M	N	P1	Lu^a	Lu^b	Typings	Cell	Gel			
12	rr	0	0	0	+	+	0	0	+	0	+	0	+	0	+	+	0	+	+	0	+	0	+	0	0	0	+		12				
13	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	0	+	0	0	+	+	+	+	+	+s	+	+		13				
14	rr	0	0	0	+	+	0	+	+	0	+	0	+	+	0	+	+	+	+	0	0	+	0	+	0	0	+		14	2+			
15	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	+	0	+	+	+	0	0	0	+	+	+	0	0	+		15				
16	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	0	+	0	+	+	+	0	+	0	+	+	+	0	+		16				
17	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	0	+	+	0	+	0	+	0	+	+	+	+	0	+		17				
18	R1wR1	+	+	0	0	+	0	0	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+s	0	+		18				
19	R1R1	+	+	0	0	+	0	0	+	0	+	+	+	0	0	+	0	0	0	0	0	+	+	0	+s	0	+		19				
20	RzR1	+	+	+	0	+	0	0	+	0	+	0	+	+	0	0	+	+	0	+	+	+	+	+	+	0	+		20				
21	r"r	0	0	+	+	+	0	0	+	+	+	0	+	0	+	+	+	+	+	0	+	0	+	+	+s	0	+		21				
22	R1R1	+	+	0	0	+	0	+	0	0	+	0	+	+	+	+	0	+	0	+	+	+	+	0	+	0	+		22				
Patient																													AC				

Antigen Phenotype

	Rh system				Kell				Duffy		Kidd		Lewis		MNSs									
	C	E	c	e	K	k	Kp^a	Js^a	Fy^a	Fy^b	Jk^a	Jk^b	Le^a	Le^b	S	s	M	N	P1	I	H	A_1		
Patient					0				0	3+					0	3+								
Pos control					2+				2+	3+					3+	3+								
Neg Control					0				0	0					0	0								

3. Does this antibody(ies) cause hemolytic transfusion reactions? Hemolytic disease of the fetus and newborn?

Both antibodies can cause both immediate and delayed reactions, as well as HDFN, although the latter is rare and less severe than HDFN caused by anti-D.

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4. How would we select blood for the patient in this case? What percentage of Caucasian donors would be compatible? African-American donors?

Select A or O negative RBCs, negative for the Fy^a and S antigens and compatible by a Coombs' crossmatch.

Caucasian donors:	*$0.34(Fy^{a-})$ x .48(S-) = 0.16 (16%)*
African-American donors:	*$0.90(Fy^{a-})$ x .69(S-) = 0.62 (62%)*
South Asian donors	*$0.13(Fy^{a-})$ x .44(S-) = 0.06 (6%)*