

New York Blood Center Enterprises



PPT 5.0: Inhibitions/Neutralizations

Lynsi Rahorst, MHPE, MT(ASCP)SBB^{CM}
Manager, Education & Training IRL/Genomics, NYBCe



Overview

Inhibition/neutralization

- What is inhibition/neutralization?
- When is it used
- Cases



Inhibition (or Neutralization) of Antibodies

A few antibodies can be inhibited or neutralized by soluble antigens

- Anti-PI1
 - Lewis Antibodies
 - Anti-Sd^a
 - Anti-Chido/Rodgers (Ch/Rg)
- Soluble antigen commercially available!
- Inhibited by serum/plasma
- Inhibited by urine!

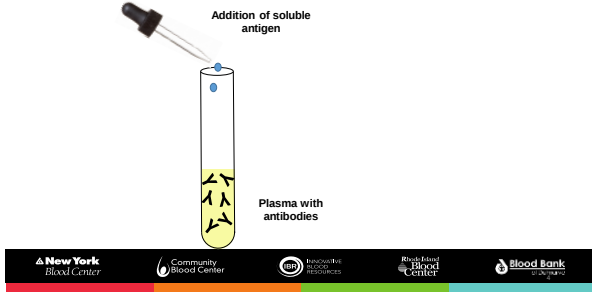
Different antibodies can be inhibited/neutralized by different soluble substances.

Use inhibitions/neutralizations:

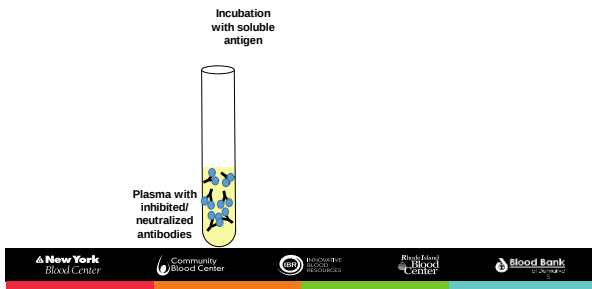
- Aids in identification
- Aids in rule-outs



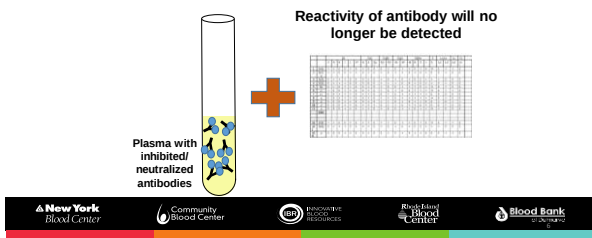
Here's How Inhibition Works:



Here's How Inhibition Works:



Here's How Inhibition Works:



Inhibition of Antibodies

Inhibition may allow us to rule out antibodies to common red cell antigens

- Tested in parallel with saline control to prove we didn't just dilute antibody
- Saline control should be positive, inhibited plasma negative

Inhibition may also help identify antibody

- If antibody inhibition is successful, provides serologic evidence of antibody specificity



Example: Anti-Sd^a

- Sd^a is antigen of high prevalence
 - Anti-Sd^a reacts with most/all reagent red cells
- Anti-Sd^a characteristic agglutination:
 - mixed-field reactions: agglutinated clumps of cells against a background of free cells
 - Agglutinates refractile, shiny microscopically
- Soluble Sd^a blood group substance found in many body fluids including:
 - Human urine
 - Guinea pig urine



Human blood agglutination in urine (positive blood from 2010)



Hedley the Guinea Pig, 2008



Example: Anti-Sd^a

		Rh				Kell		Duffy		Kidd		MNS				Results		
		D	C	E	c	e	K	k	Fy ^a	Fy ^b	Jk ^a	Jk ^b	M	N	S	s	Plasma (25°C)	
1	R ₁ R ₂	+	+	0	0	+	0	+	+	+	+	+	+	+	+	+	+	W ₊ ^{ref}
2	R ₁ R ₂	+	+	0	0	+	+	+	0	+	0	+	0	+	0	+	+	W ₊ ^{ref}
3	R ₁ R ₂	+	0	+	+	0	0	+	+	+	+	+	0	+	+	+	+	W ₊ ^{ref}
4	R ₁ r	+	0	0	+	+	0	+	+	+	+	+	+	0	+	+	+	W ₊ ^{ref}
5	r'r	0	+	0	+	+	0	+	+	+	+	+	+	0	0	+	+	W ₊ ^{ref}
6	r'r	0	0	+	+	+	0	+	+	+	+	+	0	+	0	+	+	W ₊ ^{ref}
7	rr	0	0	0	+	+	+	+	+	+	+	+	0	+	+	+	+	W ₊ ^{ref}
8	rr	0	0	0	+	+	0	+	+	+	+	+	0	+	+	+	+	W ₊ ^{ref}
9	rr	0	0	0	+	+	0	+	+	+	+	+	0	0	+	+	+	W ₊ ^{ref}
10	R ₁ R ₂	+	+	0	0	+	0	+	+	0	+	+	+	+	+	+	0	W ₊ ^{ref}
11	R ₁ r	+	0	0	+	+	+	0	0	+	+	+	0	+	+	+	+	W ₊ ^{ref}
Auto																		0v

Plasma reactivity characteristic of anti-Sd^a

- Reactive with all cells
- Mixed-field reactivity
- Refractile agglutinates
- Autocontrol negative



Example: Anti-Sd^a

		Rh				Kell		Duffy		Kidd		MNS				Results	
		D	C	E	c	e	K	Fy ^a	Fy ^b	Jk ^a	Jk ^b	M	N	S	s	Plasma USS SAT	Indirect plasma USS SAT
1	R ₁ R ₂	+	+	0	0	+	0	+	+	+	+	+	+	+	+	W _a ref	0v
2	R ₁ R ₂	+	+	0	0	+	+	+	+	0	+	0	+	0	+	W _a ref	0v
3	R ₂ R ₂	+	0	+	+	0	0	+	+	0	+	0	+	0	+	W _a ref	0v
4	R ₂ r	+	0	0	+	+	0	+	+	0	+	0	+	0	+	W _a ref	0v
5	r ⁺ r	0	+	0	+	+	0	+	+	0	+	0	+	0	+	W _a ref	0v
6	r ⁺ r	0	0	+	+	+	0	+	+	0	+	0	+	0	+	W _a ref	0v
7	rr	0	0	0	+	+	+	+	0	+	0	+	0	+	+	W _a ref	0v
8	rr	0	0	0	+	0	+	+	+	0	+	0	+	+	+	W _a ref	0v
9	rr	0	0	0	+	0	+	+	+	0	+	0	+	0	+	W _a ref	0v
10	R ₁ R ₂	+	+	0	0	+	+	+	+	0	+	+	+	+	0	W _a ref	0v
11	R ₂ r	+	0	0	+	+	+	+	0	0	+	+	+	+	+	W _a ref	0v
Auto																0v	NT



Example: Anti-Sd^a

		Rh				Kell		Duffy		Kidd		MNS				Results			
		D	C	E	c	e	K	k	Fy ^a	Fy ^b	Jk ^a	Jk ^b	M	N	S	s	Plasma USS SAT	Indirect plasma USS SAT	Dilution control USS SAT
1	R ₁ R ₂	+	+	0	0	+	0	+	+	+	+	+	+	+	+	+	W _a ref	0v	W _a ref
2	R ₁ R ₂	+	+	0	0	+	+	+	0	+	0	+	0	+	0	+	W _a ref	0v	W _a ref
3	R ₂ R ₂	+	0	+	+	0	0	+	+	+	+	+	+	+	+	+	W _a ref	0v	W _a ref
4	R ₂ r	+	0	0	+	+	0	+	+	Dilution control still reactive (didn't just dilute out antibody)						W _a ref	0v	W _a ref	
5	r ⁺ r	0	+	0	+	+	0	+	+	0	+	0	+	0	+	+	W _a ref	0v	W _a ref
6	rr	0	0	+	+	+	0	+	+	0	+	0	+	0	+	+	W _a ref	0v	W _a ref
7	rr	0	0	0	+	+	+	+	0	+	+	0	+	0	+	+	W _a ref	0v	W _a ref
8	rr	0	0	0	+	+	0	+	+	0	+	0	+	0	+	+	W _a ref	0v	W _a ref
9	rr	0	0	0	+	+	0	+	+	0	+	0	+	0	0	+	W _a ref	0v	W _a ref
10	R ₁ R ₂	+	+	0	0	+	+	+	+	0	+	+	+	+	0	+	W _a ref	0v	W _a ref
11	R ₂ r	+	0	0	+	+	+	+	0	0	+	+	+	+	+	+	W _a ref	0v	W _a ref
Auto																	0v	NT	NT



Example: Anti-Sd^a

		Rh				Kell		Duffy		Kidd		MNS				Results			
		D	C	E	c	e	K	k	Fy ^a	Fy ^b	Jk ^a	Jk ^b	M	N	S	s	Plasma USS SAT	Inhibited plasma USS SAT	Dilution control USS SAT
1	R ₁ R ₂	+	+	0	0	+	0	+	+	+	+	+	+	+	+	+	W _a ref	0V	W _a ref
2	R ₁ R ₂	+	+	0	0	+	+	+	+	0	+	0	+	0	+	+	W _a ref	0V	W _a ref
3	R ₂ R ₂	+	0	+	+	0	0	+	+	+	+	+	+	+	+	+	W _a ref	0V	W _a ref
4	R ₂ r	+	0	0	+	+	0	+	+	0	+	0	+	0	+	+	W _a ref	0V	W _a ref
5	r ⁺ r	0	+	0	+	+	0	+	+	0	+	0	+	0	+	+	W _a ref	0V	W _a ref
6	r ⁺ r	0	0	+	+	+	0	+	+	0	+	0	+	0	+	+	W _a ref	0V	W _a ref
7	rr	0	0	0	+	+	+	0	+	+	0	+	0	+	0	+	W _a ref	0V	W _a ref
8	rr	0	0	0	+	+	0	+	+	0	+	0	+	0	+	+	W _a ref	0V	W _a ref
9	rr	0	0	0	+	+	0	+	+	0	+	0	+	0	0	+	W _a ref	0V	W _a ref
10	R ₁ R ₂	+	+	0	0	+	+	+	+	0	+	+	+	+	0	+	W _a ref	0V	W _a ref
11	R ₂ r	+	0	0	+	+	+	+	0	0	+	+	+	+	+	+	W _a ref	0V	W _a ref
Auto																	0V	NT	NT



Case 1

- Patient with a known history of anti-E, anti-c, anti-Fy^a, anti-Jk^b
- Weak, extra reactivity detected; no apparent specificity

	Rh					Kell					Duffy		Kidd		Lewis		P		MNS		Lutheran		Xg		Results			
	D	C	E	e	f	V	C ^w	K	k	Kp ^a	Kp ^b	Js ^a	Js ^b	Fy ^a	Fy ^b	Jk ^a	Jk ^b	Le ^a	Le ^b	P1	M	N	S	Lu ^a		Lu ^b	Xg ^a	Xg ^b
1	+	+	0	0	+	0	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	0	+	+	+	OV
2	+	+	0	0	+	0	0	+	+	0	+	0	+	0	+	0	+	0	+	0	+	+	+	0	+	0	+	W+
3	+	+	0	0	+	0	0	0	0	0	+	0	+	0	+	0	+	0	+	0	+	+	+	0	+	0	+	0
4	+	+	0	0	+	0	0	0	0	0	+	0	+	0	+	0	+	0	+	0	+	+	+	0	+	0	+	0
5	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	0	+	+	+	+	0	+	0	+	0
6	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	0	+	+	+	+	0	+	0	+	W+
7	+	+	0	0	+	0	0	+	+	0	+	0	+	0	+	0	+	0	+	0	+	+	+	0	+	0	+	OV
8	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	0	+	+	+	+	0	+	0	+	OV
9	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	0	+	+	+	+	0	+	0	+	W+
10	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	+	0	+	0	+	W+
11	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	+	0	+	0	+	W+



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- Patient with a known history of anti-E, anti-c, anti-Fy^a, anti-Jk^b
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Weak, and Reactivity Altered, Donor/Recipient Sp.																									Could this be anti-P1? Remember that expression of P1 varies from cell to cell	Results
Rh					Kell					Duffy			Kidd		Lewis		P									
D	C	E	e	f	V	C _k	K	Kp _a	Kp _b	Js _a	Js _b	Fy _a	Fy _b	Jk _a	Jk _b	Le _a	Le _b	P ₁	M	N	S	Lu _a	Lu _b			
1	+	+	0	0	+	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	+	0	+		
2	+	+	0	0	+	0	0	+	+	0	+	0	+	0	+	0	+	+	+	+	+	+	0	+		
3	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	0	+		
4	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	0	+		
5	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	0	+		
6	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	0	+		
7	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	0	+		
8	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	0	+		
9	+	+	0	0	+	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	+	0	+		
10	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	0	+		
11	+	+	0	0	+	0	0	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	0	+		

Could this be anti-P1? Remember that expression of P1 varies from cell to cell

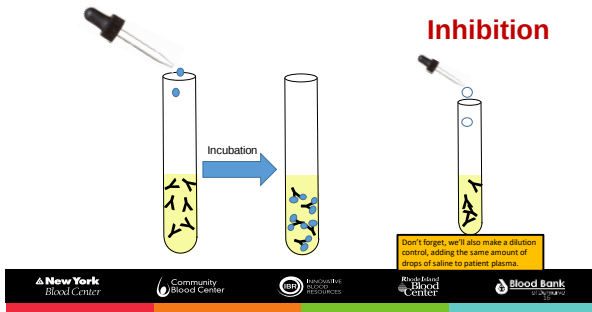


Anti-P1??

Inhibited by:

- Hydatid cyst fluid
- Pigeon egg-white
- Reagent: P1 blood group substance





Case 1

- Patient with a known history of anti-E, anti-c, anti-Fy^a, anti-Jk^b
- Weak, extra reactivity detected; no apparent specificity

	Rh								Kell				Duffy		Kidd		Lewis		P	MNS		Lutheran		Xg	Results							
	D	C	E	c	F	V	CW	K	k	Kp ^a	Kp ^b	Jk ^a	Jk ^b	Fy ^a	Fy ^b	Jk ^a	Jk ^b	Le ^a	Le ^b	PS	M	N	S	S	Le ^a	Le ^b	Xg ^a	LUSS IAT	*LUSS IAT	**LUSS IAT		
1	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+	
2	+	+	0	0	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
3	+	+	0	0	+	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4	+	+	0	0	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5	+	+	0	0	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6	+	+	0	0	+	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
7	+	+	0	0	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
8	+	+	0	0	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
9	+	+	0	0	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
10	+	+	0	0	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
11	+	+	0	0	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

= inhibited plasma
** = saline control

* = inhibited plasma
** = saline control

Case 1

- Patient with a known history of anti-E, anti-c, anti-Fy^a, anti-Jk^b
- Weak, extra reactivity detected; no apparent specificity

Notice that the inhibited plasma is nonreactive

	Rh										Kell				Duffy		Kidd		Lewis		P	MNS	Lutheran		Xg	Results					
	D	C	E	c	F	V	CW	K	k	Kp ^a	Kp ^b	Jk ^a	Jk ^b	Fy ^a	Fy ^b	Jk ^a	Jk ^b	Le ^a	Le ^b	PS	M	N	S	S	Le ^a	Le ^b	Xg ^a	LUSS IAT	*LUSS IAT	**LUSS IAT	
1	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+
2	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+
3	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+
4	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+
5	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+
6	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+
7	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+
8	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+
9	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+
10	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+
11	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+

* = inhibited plasma
** = saline control

* = inhibited plasma
** = saline control

[illegible][illegible]

Case 2

- Anti-Le^{a+b}?
- Let's try inhibition!

	Rh				Kell				Duffy		Kidd	Lewis	P	MNS	Lutheran	Xg	Results			
	D	C	E	c	e	K	k	Kp ^a	Kp ^b	Fy ^a	Fy ^b	Jk ^a	Jk ^b	M	N	S	US ^a	US ^b	**US ^a	
1	+	+	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
2	+	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
3	+	+	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
4	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
5	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
6	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
7	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
8	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
9	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
10	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
11	+	0	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov

* = inhibited plasma
* = dilution control

* = inhibited plasma
** = dilution control

New York
Blood Center

Community
Blood Center

PROQUEST
RESOURCES

Red Blood
Center

Blood Bank
of Maryland

Case 2

- Anti-Le^{a+b}?
- Let's try inhibition!

	Rh				Kell				Duffy		Kidd	Lewis	P	MNS	Lutheran	Xg	Results			
	D	C	E	c	e	K	k	Kp ^a	Kp ^b	Fy ^a	Fy ^b	Jk ^a	Jk ^b	M	N	S	US ^a	US ^b	**US ^a	
1	+	+	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
2	+	+	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
3	+	+	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
4	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
5	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
6	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
7	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
8	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
9	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
10	+	+	0	+	0	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov
11	+	0	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	1+	Ov	Ov

We have diluted the antibody!

Inhibition UNSUCCESSFUL.

These results are INVALID.

- Don't provide evidence of Lewis antibody
- Can't perform any rule outs with these results

* = inhibited plasma

Inhibition UNSUCCESSFUL.
These results are **INVALID**.
• Don't provide evidence of Lewis antibody
• Can't perform any rule outs with these results

Reactivity went away in inhibited plasma

However, reactivity also disappeared in saline control: We have diluted the antibody!

* = inhibited plasma
** = dilution control

New York
Blood Center

Community
Blood Center

PROQUEST
RESOURCES

Red Blood
Center

Blood Bank
of Maryland

Case 3

- Could this be anti-Sd^a??

	Rh				Kell				Duffy		Kidd	MNS				Results
	D	C	E	c	e	K	k	Fy ^a	Fy ^b	Jk ^a	Jk ^b	M	N	S	s	LISS IAT
1	+	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+
2	+	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+
3	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+
4	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+
5	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+
7	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+
8	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+
9	0	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+
10	+	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+
11	+	0	0	+	+	+	+	+	+	+	+	+	+	+	+	+

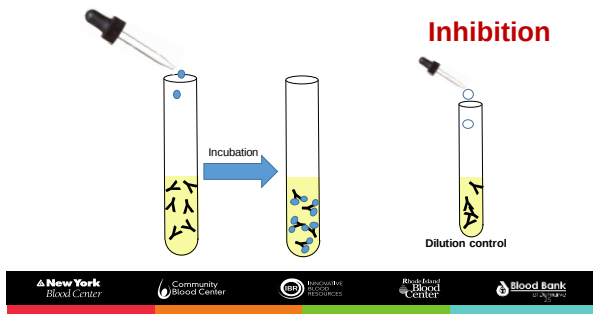
New York
Blood Center

Community
Blood Center

PROQUEST
RESOURCES

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Center

Blood Bank
of Maryland



Case 3

• Could this be anti-Sd^a??

	Rh				Kell		Duffy		Kidd		MNS				Results			
	D	C	E	c	e	K	k	Fy ^a	Fy ^b	Jk ^a	Jk ^b	M	N	S	s	LISS IAT	*LISS IAT	**LISS IAT
1	+	+	+	0	0	+	0	+	+	+	+	+	+	+	+	W+	W+	W+
2	+	+	+	0	0	+	+	+	0	+	0	+	0	+	+	W+	W+	W+
3	+	0	+	+	0	0	+	+	0	+	+	+	0	+	+	W+	W+	W+
4	+	0	0	+	+	0	+	0	0	+	0	+	0	+	+	W+	W+	W+
5	0	+	0	+	+	0	+	+	0	+	0	+	+	0	0	W+	W+	W+
6	0	0	+	+	+	0	+	0	+	+	0	+	0	+	+	W+	W+	W+
7	0	0	0	+	+	+	0	+	+	0	+	0	+	+	+	W+	W+	W+
8	0	0	0	+	+	0	+	+	0	+	0	+	+	+	+	W+	W+	W+
9	0	0	0	+	+	0	+	+	+	0	+	0	0	+	+	W+	W+	W+
10	+	+	+	0	0	+	+	+	0	+	+	+	+	+	0	W+	W+	W+
11	+	0	0	+	+	+	+	0	0	+	+	0	+	+	+	W+	W+	W+

New York

Blood Center

Community

Blood Center

ROCHESTER

BLOOD RESOURCES

Rochester

Blood Center

Blood Bank

of the

* Inhibited plasma

** Inhibited plasma

30

Case 3

• Could this be anti-Sd^a??

Inhibition **FAILED** to remove the reactivity

You are given a cropped image of a single layout block																		
	Rh				Kell		Duffy		Kidd		MNS				Results			
	D	C	E	c	e	K	k	Fy ^a	Fy ^b	Jk ^a	Jk ^b	M	N	S	s	LISS IAT	*LISS IAT	**LISS IAT
1	+	+	0	0	+	0	+	+	+	+	+	+	+	+	+	W+	W+	W+
2	+	+	0	0	+	0	+	+	+	+	+	+	+	+	+	W+	W+	W+
3	+	0	0	+	+	0	+	+	0	+	+	+	0	+	+	W+	W+	W+
4	+	0	0	+	+	0	+	+	0	+	+	+	0	+	+	W+	W+	W+
5	0	+	0	+	+	0	+	+	0	+	+	+	0	+	+	W+	W+	W+
6	0	0	+	+	+	0	+	+	0	+	+	+	0	+	+	W+	W+	W+
7	0	0	0	+	+	+	+	0	+	+	0	+	+	+	+	W+	W+	W+
8	0	0	0	+	+	0	+	+	0	+	+	0	+	+	+	W+	W+	W+
9	0	0	0	+	+	0	+	+	0	+	+	0	+	+	+	W+	W+	W+
10	+	+	0	0	+	0	+	+	0	+	+	+	+	+	0	W+	W+	W+
11	+	0	0	+	+	+	+	0	0	+	+	+	+	+	+	W+	W+	W+

Inhibition **FAILED**.

• Cannot confirm anti-Sd^a specificity

• Cannot perform any rule outs

Reactivity still present in dilution control as well.

* Inhibited plasma

** Inhibited plasma

New York Blood Center

Community Blood Center

Rochester Blood Resources

Rochester Blood Center

Blood Bank

Overview

Inhibition/neutralization

- What is inhibition/neutralization?
- When is it used
- Cases

