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Caring Expert Quality





Dosage - is a phenomenon in which red cells from homozygous people possess more antigens per red cell than cells from heterozygous people.

The effect - antibodies react more strongly with cells from homozygous people

E.g., anti-Jka would likely react stronger with Jka+ Jkb- cells (homozygous Jka expression) than Jka+ Jkb+ cells (heterozygous Jka expression)





The Dosage effect

Dosage is mainly associated with antibodies to the Duffy, Kidd, Rh, and MNS blood group systems.







Antibody Exclusion

BSH guidelines state:

The presence of anti-Jk^a, anti-Jk^b, anti-S, anti-S, anti-Fy^a and anti-Fy^b should be <u>excluded using red cells having homozygous expression of the relevant antigen.</u>

> A single example of each phenotype is sufficient for exclusion





Antibody Inclusion

BSH guidelines state:

ANTIBODY SPECIFICITY SHOULD ONLY BE ASSIGNED WHEN

The plasma is reactive with at least 2 examples of reagent red cells expressing the antigen

AND

Non-reactive with at least 2 examples of reagent red cells lacking the antigen





Now it's your turn...

Caring Expert Quality



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Produc	ct			S	Lot N	No.			Produ	ict						Lot	No.		Pro	duct				Lo	t No.			
ID Par	nel in Alseve	rs.		j,	R14	4 353	0		ID Pa	nel <u>P</u> a	paini	<mark>sed</mark> in	Alsev	ers		R15	4 3530		ID F	Panel i	n LISP	6		R1	46 35	530		
ID Par	nel in CellSta	þ		1	R14:	3 353	80		ID Pa	nel Pa	paini	sed in	CellSt	ab		R15	3 3530		Evr	viny Do	to · 20	23 04 2	0					
ID Par	nel in <u>CellMe</u>	dia			R16	3 353	0		ID Pa	nel Pa	paini	sed in	CellM	edia		R17	3 3530		Ext		1.20	23.04.2	U					
Patien	t's Name				(Cas	B			Ref.	No.				Sam	ple No.			Conc	lusion								
D.O.B.						043													Teste	d by			Date					
Unless Please	otherwise in note cell 2 in	dica Als	ted, ever	all co s is l	ells a label	are p lled a	ositiv as R14	e for 44 45:	Kp ^b ar 30	nd Lu ⁱ	' and	negat	ive for	<mark>Wr</mark> ª ar	nd <u>Co</u>	<u>ь</u> .					_							
Instructi	ons for use ca	an be	e fou	nd at	http	://ww	w.bloc	od.co.	uk/reag	gents										EC RE	PQualit	y First Ir	nternational QÜ),Laki 3	30,129	15 Ta	llinn, f	Eston
	Rh	С	D	Е	c	e	Cw	м	N	S	s	P1	Lu ^a	к	k	Kpa	Le ^a	Leb	Ey ^a	Ey ⊳	Jkª	<mark>`]k</mark> ₽	Other	IAT	ENZ			
1	$\mathbf{\kappa}_1^{W}\mathbf{\kappa}_1$	+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		3	0			
2	R_1R_1	+	+	0	0	+	0	0	+	0	+	3	0	+	+	0	0	+	0	+	0	+		2	3			
3	R_2R_2	0	+	+	+	0	0	0	+	0	+	2	0	0	+	0	+	0	0	+	+	0		0	0			
4	<u>r'r</u>	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(a+b-)	3	0			
5	<u>r"r</u>	0	0	+	+	+	0	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		3	0			
6	m	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		4	4			
7	<u>m</u>	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0	+	0	0	+	+	0	HLA+	2	3			
8	<u></u>	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		0	0			
9	m	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+		0	0			
10	<u>rr</u>	0	0	0	+	+	0	0	+	+	0	3	0	0	+	0	0	+	+	0	0	+		3	0			
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IVD

NHSBT REAGENTS Panel 1

Product Lot No. Product Lot No. Product Lot No. **ID Panel in Alsevers** R144 3530 **ID Panel Papainised in Alsevers** R154 3530 **ID Panel in LISP** R146 3530 R143 3530 **ID Panel in CellStab ID Panel Papainised in CellStab** R153 3530 Expiry Date : 2023.04.20 **ID Panel in CellMedia** R163 3530 **ID Panel Papainised in CellMedia** R173 3530 Patient's Name Ref. No. Sample No. Conclusion Case B D.O.B. Tested by Date Unless otherwise indicated, all cells are positive for Kp^b and Lu^b and negative for Wr^a and Co^b. Please note cell 2 in Alsevers is labelled as R144 4530 EC REP Quality First International QÜ, Laki 30,12915 Tallinn, Estonia +Instructions for use can be found at http://www.blood.co.uk/reagents IAT ENZ С Е С **P1** Kp^a Le^b **Fy**^a Fyb Jk^a Jkb Rh D е Cw Μ Ν S S Lu^a Κ k Le^a Other 0 3 0 1 $R_1 R_1$ + 0 + + + 0 + 0 0 0 0 + 0 0 + + 0 + 0 2 0 0 0 3 2 3 R_1R_1 + + 0 ÷ 0 + + 0 + + 0 0 + 0 + 0 + 0 0 2 3 R_2R_2 0 4 + 0 0 0 + 0 0 0 0 + 0 0 2 0 2 3 0 4 0 3 r'r + 0 + + 0 0 + 0 + 0 0 + 0 + 0 + 0 + 0 Do(atb-) 5 r"r 0 0 0 3 0 + + + 0 + + 0 0 0 0 + 0 0 + + 0 0 + 4 4 6 0 0 0 3 0 + + 0 + + + 0 + 0 0 0 + + 0 + 0 rr 2 3 7 0 0 0 + + 0 + 0 + 0 4 0 + + 0 + 0 0 + + 0 HLA+ rr 8 0 0 0 0 0 0 0 0 0 + 0 0 0 0 0 + + + rr 0 0 9 0 0 0 + 0 0 0 0 0 0 0 0 0 + + + + rr 0 3 10 0 0 0 + ÷ 0 0 + + 0 3 0 0 + 0 0 + + 0 0 + rr AUTO 0

Multiple antibodies??

Blood and Transplant



Product	Lot No.	Product		Lot No.	Product		Lot No.
ID Panel in Alsevers	R141 3529	ID Panel Papainised in Alsevers		R15 n/a	ID Panel in LISP		R14 n/a
ID Panel in CellStab	R142 3529	ID Panel Papainised in CellStab	0	R152 3529	Expire Data : 2022 04 12		
ID Panel in CellMedia	R16 n/a	ID Panel Papainised in CellMedi	a	R17 n/a	Expiry <u>Date :</u> 2023.04.13		
Patient's Name	Case B	Ref. No.	Sam	ole No.	Conclusion		
D.O.B.					Tested by E	Date	

Unless otherwise indicated, all cells are positive for Kp^b and Lu^b and negative for Wr^a and <u>Co^b</u>.

Instructi	ons for use ca	an be	fou	nd at	http	://ww	w.bloc	d.co.u	uk/reag	gents									L	EC RE	Qualit	y First Ir	nternational OÜ	,Laki 3	30,129	15 Ta	llinn, E	stonia
	Rh	С	D	Е	с	е	Cw	м	N	S	s	P1	Luª	к	k	Kpa	Le ^a	Leb	Ey ª	Ey ⊳	Jk ^a	<mark>`]K</mark> ⊧	Other	IAT	ENZ			
1	$\mathbf{\kappa}_1^{W}\mathbf{\kappa}_1$	+	+	0	0	+	+	+	0	+	0	2	0	0	+	0	0	0	+	0	0	+	Doa+b+	3				
2	R₁R₁	+	+	0	0	+	0	0	+	0	+	0	0	+	+	0	+	0	0	+	+	0	Doa+b+	3				
3	R_2R_2	0	+	+	+	0	0	+	0	+	0	0	0	0	+	0	0	+	0	+	0	+	HLA+	0				
4	<u>1'1</u>	+	0	0	+	+	0	0	+	0	+	1	0	0	+	0	0	+	0	0	+	0		0				
5	<u>r"r</u>	0	0	+	+	+	0	0	+	0	+	0	0	0	+	0	+	0	+	0	+	0	Doa+b+	3				
6	<u>m</u>	0	0	0	+	+	0	+	+	+	0	2	0	+	0	0	0	+	0	+	0	+		3				
7	<u></u>	0	0	0	+	+	0	+	0	+	0	2	0	+	+	0	0	+	+	0	+	0		3				
8	<u></u>	0	0	0	+	+	0	0	+	0	+	0	0	0	+	+	0	+	0	+	+	0	HLA+	0				
9	<u>m</u>	0	0	0	+	+	0	0	+	+	0	2	0	0	+	0	+	0	+	0	0	+	Cob+	3				
10	Ĩ	0	0	0	+	+	0	+	0	0	+	1	+	0	+	0	+	0	+	0	0	+	Doa-b+	3				
																							AUTO					



Product	Lot No.	Product		Lot No.	Product		Lot No.
ID Panel in Alsevers	R141 3529	ID Panel Papainised i	n Alsevers	R15 n/a	ID Panel in LISP		R14 n/a
ID Panel in CellStab	R142 3529	ID Panel Papainised i	n <u>CellStab</u>	R152 3529	Expiry Data : 2023 0	4 1 2	
ID Panel in CellMedia	R16 n/a	ID Panel Papainised i	n <u>CellMedia</u>	R17 n/a		4.13	
Patient's Name	Case B	Ref. No.	Samp	ole No.	Conclusion		
D.O.B.					Tested by	Date	

Unless otherwise indicated, all cells are positive for Kp^b and Lu^b and negative for Wr^a and Co^b.

Instructi	ons for use ca	an be	e fou	nd at	http	://ww	w.bloc	d.co.u	uk/rea	gents									L	EC REF	Qualit	y First Ir	ternational <u>QÜ</u>	Laki	30,129	915 Talli	inn, E	stonia	a
	Rh	С	D	Е	C	е	Cw	м	N	S	s	P1	Lu ^a	к	k	Kpª	Le ^a	Le	Eya	Exp	JK ^a	<mark>`∫K</mark> ₽	Other	IAT	ENZ				
1	$\mathbf{R}_{1}^{W}\mathbf{R}_{1}$	+	+	0	0	+	+	+	0	+	0	2	0	0	+	0	0	0	+	0	0	+	Doatb+	3					
2	R ₁ R ₁	+	+	0	0	+	0	0	+	0	+	0	0	Ð	+	0	+	0	0	+	+	0	Doatb+	3					
3	R_2R_2	0	+	+	+	0	0	+	0	1	0	0	0	0	+	0	0	+	0	+	0	+	HLA+	0					
4	r'r	+	0	0	+	+	0	0	+	0	+	1	0	0	+	0	0	+	0	0	+	0		0					
5	r''r	0	0	+	+	+	0	0	+	0	+	0	0	0	+	0	+	0	+	0	+	0	Doatb+	3					
6	m	0	0	0	+	+	0	+	+	+	0	2	0	Ð	0	0	0	+	0	+	0	+		3					
7	m	0	0	0	+	+	0	+	0	+	0	2	0	+	+	0	0	+	+	0	+	0		3					
8	<u>m</u>	0	0	0	+	+	0	0	+	0	+	0	0	0	+	+	0	+	0	+	+	0	HLA+	0					
9	<u>m</u>	0	0	0	+	+	0	0	+	+	0	2	0	0	+	0	+	0	Ð	0	0	+	Cob+	3					
10	m	0	0	0	+	+	0	+	0	0	+	1	+	0	+	0	+	0	Ð	0	0	+	Doa-b+	3					
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		-		1	<u></u>					1	1	1			1	1			1	1	1	1							

Anti-Fya & anti-K

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Product	Lot No.	Product		Lot No.	Product		Lot No.
ID Panel in Alsevers	R144 3530	ID Panel Papainised in Alsevers		R154 3530	ID Panel in LISP		R146 3530
ID Panel in CellStab	R143 3530	ID Panel Papainised in CellStab		R153 3530	Expire Data : 2022 04 20		
ID Panel in CellMedia	R163 3530	ID Panel Papainised in CellMedia		R173 3530	Expiry <u>Date .</u> 2023.04.20		
Patient's Name	Case C	Ref. No.	Samp	le No.	Conclusion		
D.O.B.					Tested by D	Date	
Unless otherwise indica	ated, all cells are positive fo	or Kp ^b and Lu ^b and negative for Wr ^a :	and <u>Co^b.</u>				2
Please note cell 2 in Als	evers is labelled as R144 4	530					
Instructions for use can b	e found at http://www.blood.co	o.uk/reagents			EC REP Quality First Inter	national OÜ,L	aki 30,12915 Tallinn, Estonia

	Rh	С	D	Е	с	е	Cw	м	N	S	s	P1	Lu ^a	к	k	Kp ^a	Le ^a	Leb	Eyª	Fy ^b	Jkª	<mark>`]K</mark> ₽	Other	IAT	ENZ		
1	$\mathbf{K}_1^{W}\mathbf{K}_1$	+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		0	0		
2	R_1R_1	+	+	0	0	+	0	0	+	0	+	3	0	+	+	0	0	+	0	+	0	+		2	0		
3	R_2R_2	0	+	+	+	0	0	0	+	0	+	2	0	0	+	0	+	0	0	+	+	0		2	0		
4	<u>r'r</u>	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(a+b-)	1	0		
5	<u>r"r</u>	0	0	+	+	+	0	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		0	0		
6	<u>m</u>	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		1	0		
7	ĩ	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0	+	0	0	+	+	0	HLA+	0	0		
8	R R	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		2	0		
9	ũ	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+		2	0		
10	ŭ	0	0	0	+	+	0	0	+	+	0	3	0	0	+	0	0	+	+	0	0	+		0	0		
																						AUTO		0			



NHSBT REAGENTS Panel 1

Lot No. Product Lot No. Product Product Lot No. **ID Panel in Alsevers ID Panel Papainised in Alsevers** R144 3530 R154 3530 ID Panel in LISP R146 3530 **ID Panel in CellStab** R143 3530 **ID Panel Papainised in CellStab** R153 3530 Expiry Date : 2023.04.20 **ID Panel in CellMedia** R173 3530 R163 3530 **ID Panel Papainised in CellMedia** Patient's Name Ref. No. Sample No. Conclusion Case C D.O.B. Tested by Date

Unless otherwise indicated, all cells are positive for Kp^b and Lu^b and negative for Wr^a and Co^b. Please note cell 2 in <u>Alsevers</u> is labelled as R144 4530

Finstructions for use can be found at http://www.blood.co.uk/reagents

EC REP Quality First International QÜ, Laki 30,12915 Tallinn, Estonia

	Rh	С	D	Е	с	е	Cw	м	N	S	s	P1	Lu ^a	к	k	Kp ^a	Le ^a	Le	Ey ^a	Ex	<mark>ĴK</mark> ª	<mark>`∫K</mark> ⊳	Other	IAT	ENZ		
1	$\mathbf{R}_{1}^{W}\mathbf{R}_{1}$	1	+	0	0	×	1	+	0	*	0	0	0	0	+	0	0	1	1	0	+	0		0	0		
2	R ₁ R ₁	+	+	0	0	+	0	0	+	0	+	3	0	+	+	0	0	+	0	+	0	+		γ	0		
3	R_2R_2	0	1	+	+	0	0	0	+	0	+	2	0	0	+	0	+	0	0	+	+	0		γ	0		
4	r'r	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(atb-)	ч	0		
5	r" r	0	0	1	1	+	0	+	0	+	0	0	0	0	*	0	0	+	+	0	0	1		0	0		
6	K.	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		ч	0		
7	Ω.	0	0	0	+	+	0	1	0	+	0	1	0	/	+	0	1	0	0	/	+	0	HLA+	0	0		
8	μ,	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		2	0		
9	R	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+		γ	0		
10	R	0	0	0	+	+	0	0	-	+	0	3	0	0	+	0	0	+	+	0	0	+		0	0		
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Anti-s

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HSBT	REAGENT	S	Ра	nel 1	1																						
Produc	ct				Lot N	lo.			Produ	ıct						Lot N	No.		Pro	duct				Lo	ot No.		
ID Par	nel in <u>Alseve</u>	CS.			R144	4 353	0		ID Pa	nel Pa	apaini	sed in	Alsev	ers		R15	4 3530		ID I	Panel i	n LISP	,		R	146 35	j 30	
ID Par	nel in <u>CellSta</u>	þ			R14:	3 353	0		ID Pa	nel Pa	apaini	sed in	CellS	tab		R15	3 3530		Eve		to : 20	22 04 2	0				
ID Par	nel in <u>CellMe</u>	dia			R16:	3 353	0		ID Pa	nel Pa	apaini	sed in		ledia		R17	3 3530			Diry Da	<u>te :</u> 20	23.04.2	.0				
Patien	ťs Name				(200	• D			Ref.	No.				Sam	ple No.			Conc	lusion							
D.O.B.						JUSI													Teste	d by			Date				
Jnless Please	otherwise in note cell 2 in	dica Als	ted, ever	all c s is i	ells a label	are p lled a	ositiv as R14	e for 44 453	Kp ^b ar 30	nd Lu ⁱ	° and	negat	ive for	Wr ^a ai	nd <mark>Co</mark>	b											
nstructi	ons for use ca	an be	fou	nd at	http	://ww	w.bloc	od.co.	uk/rea	gents										EC REI	Qualit	ty First Ir	nternational 💭	Ü,Laki	30,129	15 Ta	llinn, Es
	Rh	С	D	E	c	е	Cw	м	N	S	s	P1	Lu ^a	к	k	Kpª	Le ^a	Leb	Ey ^a	Ey ⊳	<u>Jk</u> ª	<mark>Jk</mark> ⁵	Other	IAT	ENZ		
1	$\mathbf{\kappa}_1^{W}\mathbf{\kappa}_1$	+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		3	0		
2	R₁R₁	+	+	0	0	+	0	0	+	0	+	3	0	+	+	0	0	+	0	+	0	+		0	0		
3	R_2R_2	0	+	+	+	0	0	0	+	0	+	2	0	0	+	0	+	0	0	+	+	0		0	0		
4	<u>r'r</u>	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(a+b-)	0	0		
5	<u>r"r</u>	0	0	+	+	+	0	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		3	0		
6	<u></u>	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		0	0		
7	<u></u>	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0	+	0	0	+	+	0	HLA+	3	0		
8	<u></u>	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		3	0		
9	<u>rr</u>	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+		0	0		
10	<u>rr</u>	0	0	0	+	+	0	0	+	+	0	3	0	0	+	0	0	+	+	0	0	+		3	0		
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Product					Lot N	No.			Produ	ct						Lot N	No.		Pro	duct				Lo	t No.			
ID Panel i	in Alsever	S,			R14	4 353	30		ID Pa	nel <u>P</u> a	paini	sed in	Alsev	ers		R15	4 3530		ID I	Panel i	n LISP)		R1	46 35	530		
ID Panel i	in CellStat	þ			R14:	3 353	30		ID Pa	nel Pa	paini	sed in	CellSt	ab		R15	3 3530	6	Eve	in De	40.20	22 04 2	0					
ID Panel i	in CellMed	lia		1	R163	3 353	30		ID Pa	nel Pa	paini	sed in	CellM	edia		R17	3 3530			Diry Da	<u>te :</u> 20	23.04.2	0					
Patient's N	Name				(Cas	e D			Ref.	No.				Sam	ple No.			Conc	lusion								
D.O.B.																			Teste	d by			Date					
Unless oth Please not	nerwise ind te cell 2 in	dicat Alse	ed, a	all c şis	ells a labe	are p lled :	ositiv as R14	e for 14 45:	Kp⁵ar 30	nd Lu ^t	o and	negat	ive for	Wrª ar	nd <u>Co</u> l													
Instructions	s for use ca	n be	four	nd at	http	://ww	w.bloc	od.co.	uk/reag	gents										EC REF	Qualit	y First Ir	nternational QÜ	,Laki 3	30,129	15 Ta	llinn, Es	stonia
	Rh	С	D	Е	с	e	Cw	м	N	S	s	P1	Lu ^a	K	k	Kp ^a	Le ^a	Leb	Ey ^a	Ey. ^b	<mark>JK</mark> ª	<mark>`]K</mark> ₽	Other	IAT	ENZ			
1	$\mathbf{R}_1^{W}\mathbf{R}_1$	+	+	0	0	+	-	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		3	0			
2	R ₁ R ₁	*	+	0	0	1	0	0	/	0	1	3	0	+	+	0	0	-	0	-	0			0	0			

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Can you include anti-M and anti-S?

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Blood and Transplant



Produc	t	-			- Lot N	lo			Produ	ct						Lot	Jo		Pro	duct				10	t No	
ID Pan	αl in Δleavo	re			R141	1 352	9		ID Pa	nel Pa	naini	sod in		ore		R15	n/a			Danel i	n I ISP			R	4 n/a	
ID Pan	el in CellSta	b.			R142	352	9		ID Pa	nel Pa	naini	sed in		tab		R15	2 3529			aneri					4 11/a	
ID Pan	el in CellMe	dia			R16	n/a	•		ID Pa	nel Pa	paini	sed in		edia		R17	n/a		- Exp	oiry Da	<u>te :</u> 20	23.04.1	3			
Patient	's Name				-	~	0			Ref.	No.				Sam	ple No.			Conc	lusion						
DOB						asi	υ								24.000 (2020)	•			Tosta	d by			Data			
D.O.D.																-			Teste	uby			Date			
Unless o	otherwise in	dica	ted, a	all ce	ells a	ire p	ositiv	e for	Kg ^₀ ar	nd Lu ^r	and	negati	ive for	Wr ^a ar	nd <u>Co</u> ¤											
Instructio	ons for use ca	an be	four	nd at	http:	.//ww	w.bloc	d.co.	uk/rea	gents									E	EC REF	Qualit	v First Ir	nternational OÜ	,Laki 3	30,1291!	5 Tallinn,
	Rh	с	D	Е	c	е	C"	м	N	S	s	P1	Lu ^a	к	k	Kpª	Le ^a	Leb	Ey ^a	Ey	Jk ^a	JKp	Other	IAT	ENZ	
1	$\mathbf{\kappa}_1^{W}\mathbf{\kappa}_1$	+	+	0	0	+	+	+	0	+	0	2	0	0	+	0	0	0	+	0	0	+	Doa+b+	3		
2	R_1R_1	+	+	0	0	+	0	0	+	0	+	0	0	+	+	0	+	0	0	+	+	0	Doa+b+	0		
3	R_2R_2	0	+	+	+	0	0	+	0	+	0	0	0	0	+	0	0	+	0	+	0	+	HLA+	3		
4	<u>r'r</u>	+	0	0	+	+	0	0	+	0	+	1	0	0	+	0	0	+	0	0	+	0		0		
5	<u>r"r</u>	0	0	+	+	+	0	0	+	0	+	0	0	0	+	0	+	0	+	0	+	0	Doa+b+	0		
6	rr	0	0	0	+	+	0	+	+	+	0	2	0	+	0	0	0	+	0	+	0	+		1		
7	rr	0	0	0	+	+	0	+	0	+	0	2	0	+	+	0	0	+	+	0	+	0		3		
8	rr	0	0	0	+	+	0	0	+	0	+	0	0	0	+	+	0	+	0	+	+	0	HLA+	0		
9	rr	0	0	0	+	+	0	0	+	+	0	2	0	0	+	0	+	0	+	0	0	+	Cob+	3		
10	rr	0	0	0	+	+	0	+	0	0	+	1	+	0	+	0	+	0	+	0	0	+	Doa-b+	3		
																							AUTO			



Blood and Transplant

Product	Lot No.	Product		Lot No.	Product		Lot No.
ID Panel in Alsevers	R141 3529	ID Panel Papainised in	Alsevers	R15 n/a	ID Panel in LISP		R14 n/a
ID Panel in CellStab	R142 3529	ID Panel Papainised in	CellStab	R152 3529	Expire Data : 2022	04 12	
ID Panel in CellMedia	R16 n/a	ID Panel Papainised in	<u>CellMedia</u>	R17 n/a	Expiry Date : 2023	.04.13	
Patient's Name	Case D	Ref. No.	Samp	ole No.	Conclusion		
D.O.B.					Tested by	Date	
Unloss otherwise indias	ted all calls are positive fo	r Knh and Lub and nagativ	a far Wra and Cab		•		

Unless otherwise indicated, all cells are positive for Kp^b and Lu^b and negative for Wr^a and Co^b.

Instructi	ons for use ca	an be	four	nd at	http	://ww	w.bloc	d.co.u	k/reag	gents				-						EC REF	Qualit	y First Ir	ternational QÜ	Laki 3	30,129	15 Talli	nn, Es	stonia
	Rh	С	D	Ε	с	e	C"	м	N	S	s	P1	Lu ^a	К	k	Kpª	Le ^a	Le	Ey ^a	Exp	<mark>ĴK</mark> ª	<mark>ĵ</mark> K₀	Other	IAT	ENZ			
1	$\mathbf{R}_{1}^{W}\mathbf{R}_{1}$	+	+	0	0	+	+	+	0	+	0	2	0	0	+	0	0	0	+	0	0	+	Doatb+	3				
2	R ₁ R ₁	+	+	0	0	+	0	0	+	0	+	0	0	+	+	0	+	0	0	+	+	0	Doatb+	0				
3	R_2R_2	0	+	+	+	0	0	+	0	+	0	0	0	0	+	0	0	+	0	+	0	+	HLA+	3				
4	r'r	+	0	0	+	+	0	0	+	0	+	1	0	0	+	0	0	+	0	0	+	0		0				
5	c''c	0	0	+	+	+	0	0	+	0	+	0	0	0	+	0	+	0	+	0	+	0	Doatb+	0				
6	Ω,	0	0	0	+	+	0	÷	+	+ (0	2	0	+	0	0	0	+	0	+	0	+		1				
7	ŭ	0	0	0	+	+	0	+	0	+	0	2	0	+	+	0	0	+	+	0	+	0		3				
8	ä	0	0	0	+	+	0	0	+	0	+	0	0	0	+	+	0	+	0	+	+	0	HLA+	0				
9	ŭ	0	0	0	+	+	0	0	+	Ð	0	2	0	0	+	0	+	0	+	0	0	+	Cob+	3				
10	ũ	0	0	0	+	+	0	Ð	0	0	+	1	+	0	+	0	+	0	+	0	0	+	Doa-b+	M				
																							AUTO					
																									47			

Anti-M & anti-S



NHSBT	REAGENT	S	Pa	nel	1																					
Produc	:t				Lot N	No.			Produ	ict						Lot I	No.		Pro	duct				Lc	ot No.	
ID Pan	el in <u>Alseve</u>	rs,			R14	4 353	30		ID Pa	nel 🎦	apaini	<u>sed</u> ir	n <u>Alsev</u>	vers		R15	4 3530		ID I	Panel i	n LISP)		R	146 35	30
ID Pan	el in <u>CellSta</u>	þ			R14	3 353	30		ID Pa	nel P;	apaini	sed ir	n <u>CellS</u>	tab		R15	3 3530		Ew	alma Da	4	22.04.2	0			
ID Pan	el in <u>CellMe</u>	dia			R16	3 353	30		ID Pa	nel Pa	apaini	sed ir	n <u>CellM</u>	ledia		R17	3 3530		EX	Diry Da	<u>te :</u> 20	23.04.2	.0			
Patient	's Name				(Cas	e E			Ref.	No.				Sam	ple No.			Conc	lusion						
D.O.B.																			Teste	d by			Date			
Unless	otherwise in	dica	ted,	all c	ells a	are p	ositiv	e for	Kp ^b aı	nd Lu	^b and	negat	ive for	Wr ^a a	nd Co	^b .										
Please r	note cell 2 in	Als	ever	s is	labe	led	as R14	44 453	30										-		_					
Instructio	ons for use ca	an be	e fou	nd at	t <u>http</u>	://ww	w.bloc	od.co.	uk/rea	gents									L	EC RE	Qualit	ty First In	nternational <u>OÜ</u>	,Laki	30,129	15 Tallir
	Rh	С	D	E	C	е	Cw	м	N	S	s	P1	Lu ^a	к	k	Kpa	Le ^a	Leb	Ey ^a	Ey	Jk ^a	<mark>Jk</mark> ⊳	Other	IAT	ENZ	
1	$\mathbf{\kappa}_1^{W}\mathbf{\kappa}_1$	+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		0	0	
2	R₁R₁	+	+	0	0	+	0	0	+	0	+	3	0	+	+	0	0	+	0	+	0	+		0	0	
3	R_2R_2	0	+	+	+	0	0	0	+	0	+	2	0	0	+	0	+	0	0	+	+	0		0	0	
4	<u>r'r</u>	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(a+b-)	2	3	
5	<u>r"r</u>	0	0	+	+	+	0	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		2	3	
6	<u></u>	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		3	4	
7	<u></u>	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0	+	0	0	+	+	0	HLA+	3	4	
8	ĩ	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		3	4	
9	ŗŗ	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+		3	4	
10	ŗŗ	0	0	0	+	+	0	0	+	+	0	3	0	0	+	0	0	+	+	0	0	+		3	4	
																						AUTO		0		



Product	Lot No.	Product	Lot No.	Product	Lot No.
ID Panel in Alsevers	R144 3530	ID Panel Papainised in Alsevers	R154 3530	ID Panel in LISP	R146 3530
ID Panel in CellStab	R143 3530	ID Panel Papainised in CellStab	R153 3530	Expire Data + 2022 04 20	
ID Panel in CellMedia	R163 3530	ID Panel Papainised in CellMedia	R173 3530	Expiry <u>Date :</u> 2023.04.20	
Patient's Name		Ref No	Sample No	Conclusion	
r adent s Name	Case E	Ken He.	oumpie no.	Conclusion	
D.O.B.				Tested by Da	te

Unless otherwise indicated, all cells are positive for Kp^b and Lu^b and negative for Wr^a and Co^b. Please note cell 2 in <u>Alsevers</u> is labelled as R144 4530

+Instruction	ons for use ca	an be	e foui	nd at	t http	://ww	w.bloc	od.co.	uk/rea	gents									[EC REI	Qualit	y First Ir	nternational QÜ	Laki 3	30,129)15 Tal	llinn, f	Estoni	а
	Rh	С	D	Е	c	е	Cw	м	N	S	s	P1	Lu ^a	к	k	Kp ^a	Le ^a	Le	Exª	Ex.	JK ^a	<mark>`∫K</mark> ⊳	Other	IAT	ENZ				
1	$\mathbf{R}_1^{W}\mathbf{R}_1$	*	+	0	0	1	4	1	0	/	0	0	0	0	+	0	0	1	1	0		0		0	0				
2	R ₁ R ₁	+	+	0	0	+	0	0	+	0	*	3	0	1	+	0	0	+	0	1	0	-		0	0				
3	R_2R_2	0	1	1	1	0	0	0	/	0	+	2	0	0	1	0	1	0	0	+	+	0		0	0				
4	<u>r'r</u>	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(atb-)	2	3				
5	<u>r''r</u>	0	0	+	+	+	0	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		2	3				
6	Ω.	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		3	4				
7	Ω.	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0	+	0	0	+	+	0	HLA+	3	4				
8	л.	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		3	4				
9	ш,	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+		3	4				
10	л.	0	0	0	+	+	0	0	+	+	0	3	0	0	+	0	0	+	+	0	0	+		3	4				
																						AUTO		0					
								1																					

Most clinically significant antibodies have been Excluded... ?antibody specificity

Blood and Transplant



NHSBI	REAGENT	5	Pa	nel '	1																							
Produc	ct				Lot N	No.			Produ	ict						Lot N	No.		Pro	duct				Lo	t No.			
ID Par	nel in <u>Alseve</u>	rs.			R14	4 35:	30		ID Pa	nel Pa	paini	sed in	Alsev	ers		R154	4 3530		ID F	Panel i	n LISP)		R1	46 35	30		
ID Par	nel in CellSta	þ		1	R14:	3 353	30		ID Pa	nel Pa	paini	sed in	CellSt	ab		R15	3 3530		E	les De		00.04.0	0					
ID Par	nel in CellMe	dia			R163	3 353	30		ID Pa	nel 🎇	paini	sed in	CellM	edia		R173	3 3530		- Ext	ory Da	<u>te :</u> 20	23.04.2	0					
Patient	SBT REAGENTS Panel 1 oduct Lot No. Panel in Alsevers R144 3530 Panel in CellStab R143 3530 Panel in CellMedia R163 3530 tient's Name Case D.B. Case ess otherwise indicated, all cells are posase note cell 2 in Alsevers is labelled as ructions for use can be found at http://www. Rh C D E c e 1 R1 H 0 J J 2 R1R1 + 0 J J 3 R2R2 - J 0 J 4 c'r + 0 + + 5 c'r 0 0 + + 6 rr 0 0 + + 6 rr 0 0 + + 8 rr 0 0 + +									Pati	ents F	Rh/K:	R1R2	, K-	Sam	ple No.			Concl	usion								
D.O.B.										10 10001000									Teste	d by			Date					
Unless	otherwise in	dica	ted,	all c	ells a	are p	ositiv	e for	Kp ^ь a	nd Lu ^t	and	negati	ive for	<mark>₩r</mark> ª ar	d Cot													
Please	note cell 2 in		ever	ș is I	labe	lled	as R14	44 453	30										Г		-							
Instructi	ons for use ca	an be	fou	nd at	http	://wv	w.bloc	od.co.	uk/rea	gents										ECREF	Qualit	y First Ir	nternational QÜ	Laki 3	0,129	15 Tal	linn, F	stonia
	Rh	С	D	E	C	e	Cw	м	N	S	s	P1	Lu ^a	к	k	Kpa	Le ^a	Le	Ey ^a	Ey. ^b	JK.ª	<mark>,JK</mark> ₽	Other	IAT	ENZ			
1	$\mathbf{R}_{1}^{W}\mathbf{R}_{1}$	+	+	0	0	1	14	1	0	/	0	0	0	0	+	0	0	1	1	0	1	0		0	0			
2	R₁R₁	+	+	0	0	+	0	0	+	0	ł	3	0	1	+	0	0	+	0	1	0	1		0	0			
3	R_2R_2	0	1	1	1	0	0	0	/	0	+	2	0	0	1	0	/	0	0	+	+	0		0	0			
4	<u>r'r</u>	+	0	0	÷	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(atb-)	2	3			
5	<u>ג''ג</u>	0	0	+	+	+	0	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		2	3			
6	π	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		3	4			
7	π	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0	+	0	0	+	+	0	HLA+	3	4			
8	π	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		3	4			
9	π	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+		3	4			
10	II.	0	0	0	(+	+	0	0	+	+	0	3	0	0	+	0	0	+	+	0	0	+		3	4			

Anti-f (ce)

Patients RhK: R1R2 – CD<u>e</u> / <u>c</u>DE AUTO

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NHSBI	REAGENT	S	Pa	nel 1	1																					
Produc	ct				Lot N	lo.			Produ	ct						Lot N	No.		Pro	duct				Lo	t No.	
ID Par	nel in <mark>Alseve</mark>	s.			R144	4 353	80		ID Pa	nel Pa	paini	sed in	Alsey	ers		R15	4 3530		ID F	Panel i	n LISP	6		R	46 3	530
ID Par	nel in <u>CellSta</u>	þ			R14:	3 353	30		ID Pa	nel Pa	paini	sed in	CellSt	ab		R15	3 3530		Eve	in Do	to : 20	22 04 2	0			
ID Par	nel in <u>CellMe</u>	dia			R163	3 353	30		ID Pa	nel <u>P</u> a	paini	sed in	CellM	edia		R17	3 3530		Exp	ory Da	te : 20	23.04.2	.0			
Patient	ťs Name	Т				-	-								Sam	ple No.			Conc	usion						
					(las	ег			Pati	ient's	Rh/K:	R1R1	, K-					_				_			
D.O.B.																			Teste	d by			Date			
Unless	otherwise in	dica	R143 3530 ID Panel Papainised in CellStab R153 3530 Expiry I R163 3530 ID Panel Papainised in CellMedia R173 3530 Expiry I Case F Patient's Rh/K: R1R1, K- Sample No. Conclusion Conclusion ted, all cells are positive for Kp ^b and Lu ^b and negative for Wr ^a and Co ^b . evers is labelled as R144 4530 EC D E C Conclusion D E C e Conclusion Tested by ted, all cells are positive for Kp ^b and Lu ^b and negative for Wr ^a and Co ^b . EC e found at http://www.blood.co.uk/reagents D E C C E C E C E C E C E C E C E C E C E C E C E C E C E C E C E C E C E C E																							
Please	note cell 2 in	Als	ever	ş is l	abel	led a	as R14	4 453	80										Г							
Instructi	ons for use ca	an be	e foui	nd at	http	://ww	w.bloc	d.co.u	uk/reag	gents									L	EC REF	Qualit	y First Ir	nternational QÜ	J,Laki 3	30,129	15 Ta
	Rh	С	D	E	c	е	Cw	м	N	S	s	P1	Lu ^a	к	k	Kpa	Le ^a	Leb	Eya	Ey ^b	Jk ^a	<mark>Jk</mark> ⊳	Other	IAT	ENZ	
1	$\mathbf{\kappa}_1^{W}\mathbf{\kappa}_1$	+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		0	0	
2	R₁R₁	+	+	0	0	+	0	0	+	0	+	3	0	+	+	0	0	+	0	+	0	+		0	0	
3	R_2R_2	0	+	+	+	0	0	0	+	0	+	2	0	0	+	0	+	0	0	+	+	0		3	4	
4	<u>r'r</u>	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(a+b-)	3	4	
5	<u>r"r</u>	0	0	+	+	+	0	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		3	4	
6	III	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		3	4	
7	ĩ	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0	+	0	0	+	+	0	HLA+	3	4	
8	III	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		3	4	
9	<u></u>	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+		3	4	
10	m	0	0	0	+	+	0	0	+	+	0	3	0	0	+	0	0	+	+	0	0	+		3	4	
																						AUTO		0		



IVD

NHSBT REAGENTS Panel 1

Product	Lot No.	Produ	uct		Lot No.	Product		Lot No.
ID Panel in Alsevers	R144 3530	ID Pa	nel Papainised in Alsevers		R154 3530	ID Panel in LISP		R146 3530
ID Panel in CellStab	R143 3530	ID Pa	nel Papainised in CellStab		R153 3530	Evoin Data : 2022 (4 20	
ID Panel in CellMedia	R163 3530	ID Pa	nel Papainised in CellMedia		R173 3530	Expiry <u>Date .</u> 2023.0	14.20	
Patient's Name	Case F		Patient's Rh/K· R1R1 K-	Samp	le No.	Conclusion		
D.O.B.						Tested by	Date	

Unless otherwise indicated, all cells are positive for Kp^b and Lu^b and negative for Wr^a and Co^b. Please note cell 2 in Alsevers is labelled as R144 4530

Instructions	for use son	he found of	http://hearary.bl	and an ul/mannenta
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 | IAT | ENZ | | | |
| $\mathbf{R}_{1}^{W}\mathbf{R}_{1}$ | 1 | - | 0 | 0 | * |

 | * | 0 | 1 | 0 | 0
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| R_2R_2 | 0 | + | + | \odot | 0 | 0

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R1R1 + + 0 0 + + 0 0 R2R2 0 + + + 0 0 + + 0 r'r 0 0 + + + 0 + + 0 r'r 0 0 + + + 0 + + 0 rr 0 0 0 + + 0 + + 0 rr 0 0 0 + + 0 + + 0 rr 0 0 0 + + 0 +</td><td>Nons for use can be found at http://www.blood.co.u Rh C D E c e C ^w M $R_1^W R_1$ I I O 0 I I I R_1R_1 I I O 0 I I I I R_1R_1 I I O 0 I I O O R_2R_2 O I I I O O I I O O R_2R_2 O I I I O O I I O O R_1R_1 I I O O I I O O O I I O O R_1R_1 I I O O I I O O I I O I I I O I I I I I I I I I I I I I I | Nons for use can be found at http://www.blood.co.uk/read Rh C D E c e C ^w M N $R_1^W R_1$ * * 0 0 * * 0 0 * 0 0 + 0 0 + 0 0 + 0 0 + 0 0 + 0 0 + 0 0 + 0 0 + 1 0 0 + 1 0 0 + 1 0 0 + 1 0 0 + 1 0 0 + 1 | Nons for use can be found at http://www.blood.co.uk/reagents Rh C D E c e C ^w M N S R_1 I | Nons for use can be found at http://www.blood.co.uk/reagents Rh C D E c e C ^w M N S S R_1 I < | None for use can be found at http://www.blood.co.uk/reagents Rh C D E c e C* M N S S P1 $R_1^W R_1$ * * 0 0 * * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 0 0 * 2 3 R1R1 + + 0 0 + 0 0 + 2 3 3 3 3 3 3 3 4 4 0 0 + 2 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 | Non s for use can be found at http://www.blood.co.uk/reagents Rh C D E c e C ^w M N S S P1 Lu ^a $R_1^W R_1$ i i 0 i i 0 i 0 0 i i 0 i 0 0 i i 0 i 0 0 i i 0 0 i i 0 0 i i 0 0 i 0 0 i 0 0 i 0 0 i 0 0 i 0 0 i 0 0 i 0 0 i 0 0 i 0 0 i 1 0 0 i i 0 0 i 1 0 0 i 1 0 0 i 1 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 1 0 1 <t< td=""><td>None for use can be tour at http://www.blood.co.uk/reagents Rh C D E c e C^w M N S s P1 Lu^a K $R_1^W R_1$ i i i i i 0 i 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 1 0 1 0 1 0 0 0 1 0 0 1 1 0 0 0 1 1 0 0 1 1 1 1 1 1</td><td>Non Sof use can be found at http://www.blood.co.uk/reagents Rh C D E c e C^w M N S s P1 Lu^a K k $R_1^WR_1$ i i i i 0 i 0 i 0 0 0 0 i i R_1R_1 + + 0 0 + 0 0 + 0 i i i i i i i i i i i 0 0 i</td><td>non for use can be found at http://www.blood.co.uk/reagents Rh C D E c e C^w M N S s P1 Lu^a K k kga^a $R_1^W R_1$ \checkmark O O 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R1R1 = CDe/CDe Cannot exclude anti-E

Blood and Transplant



IVD

Reference Panel 1 Profile

Blood and Transplant

NHSBT REAG	ENTS	Case	F	Product :	Panel 1 in Panel 1 in	Alsevers Cellstab	Lot N Lot N	lo : R201 3286 lo : R202 3286	Expiry date	<u>:</u> 2023.04
Patient's Name			Requestor			Hematos R	ef No.		Tested by	
Date of Birth			Hosp No.			Sample No.			Date Tested	

Unless otherwise indicated, all cells are positive for Kp^b and Lu^b and negative for Wr^a and Co^b.

						-									-							-			
	Rh	с	D	E	c	e	Cw	м	N	S	s	P1	Lu ^a	к	k	Kpa	Le ^a	Le ^b	Exa	Exp	Jk a	<mark>,∫K</mark> ⊳	Other	IAT	
1	R1wR1	+	+	0	0	+	+	0	+	0	+	3	0	0	+	0	0	+	0	+	0	+	HLA+	0	
2	R1wR1	+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		0	
3	R1RZ	+	+	+	0	+	0	+	+	0	+	0	0	0	+	0	0	+	+	0	0	+		2	
4	RZr'	+	+	+	0	+	0	+	+	0	+	0	0	0	+	0	+	0	0	+	+	0		2	
5	Ror	0	+	0	+	+	0	0	+	0	+	3	0	0	+	0	0	+	0	0	+	0		4	
6	R1R1	+	+	0	0	+	0	+	+	0	+	0	0	+	0	0	0	+	+	0	0	+		0	
7	R1R1	+	+	0	0	+	0	+	0	+	0	0	0	+	+	0	0	0	0	w	+	0		0	
8	R1r'	+	+	0	0	+	0	0	+	0	+	2	0	0	+	+	+	0	0	+	0	+	HLA+	0	
9	R1R1	+	+	0	0	+	0	+	0	+	+	3	+	0	+	0	0	+	w	0	0	+	Bga+	0	
10	R1R1	+	+	0	0	+	0	0	+	+	0	0	0	0	+	0	0	+	+	0	0	+		0	
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NHSBT REAGENTS Case F Product: Panel 1 in Alsevers Panel 1 in Cellstab. Lot No : R201 3286 Expiry date : 2023.04.06 Patient's Name Requestor Hematos. Ref No. Tested by Date of Birth Tested by Date 75 Name Date 75 Name Tested by Date 75 Name Date 75 Name No. Tested by Date 75 Name Date 75 Name No. Tested by Date 75 Name Date 75 Name No. No.																												
NHSE														Pane	el 1 in	Cel	Istab	Lot	No	: R2	02 328	86	Exp	oiry <u>date</u>	: 2023	6.04.	06	
Patient	's Name							F	Reques	tor						He	ematos F	lef No.					Teste	ed by				
Date of	Birth							ŀ	losp N	о.						Sa	ample No						Date	Tested				
Inless o	otherwise in	dicate	d, all	cel	ls a	re po	ositiv	e for ((p ^b an	d <mark>Lu</mark> b a	nd neg	gative	for Wr	and Co	о ^ь .	_												
	12.202				_								_							_					Ілт	·I		
	Rh	c	D		E	c	е	C.	м	N	S	S	P1	Lu ^a	к	k	Kpa	Le ^a	Le⁵	Eya	Exp	<u>'</u> ľka	<mark>`}K</mark> ₽	Other				
1	R1wR1	+	+		0	0	+	+	0	+	0	+	3	0	0	+	0	0	+	0	+	0	+	HLA+	0			
2	R1wR1	+	+		0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		0			
3	R1RZ	+	+	C	Ð	0	+	0	+	+	0	+	0	0	0	+	0	0	+	+	0	0	+		2			
4	RZr'	+	+	C	Ð	0	+	0	+	+	0	+	0	0	0	+	0	+	0	0	+	+	0		2			
5	Ror	0	+		0 (Ð	+	0	0	+	0	+	3	0	0	+	0	0	+	0	0	+	0		4			
6	R1R1	+	+		0	0	+	0	+	+	0	+	0	0	+	0	0	0	+	+	0	0	+		0			
7	R1R1	+	+		0	0	+	0	+	0	+	0	0	0	+	+	0	0	0	0	w	+	0		0			
8	R1r'	+	+		0	0	+	0	0	+	0	+	2	0	0	+	+	+	0	0	+	0	+	HLA+	0			
9	R1R1	+	+		0	0	+	0	+	0	+	+	3	+	0	+	0	0	+	w	0	0	+	Bga+	0			
10	R1R1	+	+		0	0	+	0	0	+	+	0	0	0	0	+	0	0	+	+	0	0	+		0			
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Reference Panel 1 Profile

Blood and Transplant

Anti-c & anti-E

IVD

+

NHS **Blood and Transplant**

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Product Lot No. Product Lot No. Product Lot No. ID Panel in Alsevers. R144 3530 ID Panel Papainised in Alsevers. R154 3530 ID Panel in LISP R ID Panel in CellStab R143 3530 ID Panel Papainised in CellStab R153 3530 Expiry Date : 2023.04.20 ID Panel in CellMedia R163 3530 ID Panel Papainised in CellMedia R173 3530 Expiry Date : 2023.04.20 Patient's Name Case G Patient Rh/K = R1R1, K- Sample No. Conclusion Unless otherwise indicated, all cells are positive for Kpb and Lub and negative for Wra and Cob. University of the second seco	Lot No. R146 3530
ID Panel in Alsevers R144 3530 ID Panel Papainised in Alsevers R154 3530 ID Panel in LISP R ID Panel in CellStab R143 3530 ID Panel Papainised in CellStab R153 3530 Expiry Date : 2023.04.20 ID Panel in CellMedia R163 3530 ID Panel Papainised in CellMedia R173 3530 Expiry Date : 2023.04.20 Patient's Name Case G Patient Rh/K = R1R1, K- Sample No. Conclusion D.O.B. Unless otherwise indicated, all cells are positive for Kp ^b and Lu ^b and negative for Wr ^a and Co ^b . Conclusion	R146 3530
ID Panel in CellStab R143 3530 ID Panel Papainised in CellStab R153 3530 Expiry Date : 2023.04.20 ID Panel in CellMedia R163 3530 ID Panel Papainised in CellMedia R173 3530 Expiry Date : 2023.04.20 Patient's Name Case G Patient Rh/K = R1R1, K- Sample No. Conclusion D.O.B. Unless otherwise indicated, all cells are positive for Kp ^b and Lu ^b and negative for Wr ^a and Co ^b . Conclusion	Laki 30,12915 Tallinn, Et
ID Panel in CellMedia R163 3530 ID Panel Papainised in CellMedia R173 3530 Expiry Date : 2023.04.20 Patient's Name Case G Patient Rh/K = R1R1, K- Sample No. Conclusion D.O.B. Unless otherwise indicated, all cells are positive for Kp ^b and Lu ^b and negative for Wr ^a and Co ^b . Conclusion	Laki 30,12915 Tallinn, Et
Patient's Name Case G Patient Rh/K = R1R1, K- Sample No. Conclusion D.O.B. Date Unless otherwise indicated, all cells are positive for Kp ^b and Lu ^b and negative for Wr ^a and Co ^b . Conclusion Tested by Date	Laki 30,12915 Tallinn, Et
Unless otherwise indicated, all cells are positive for Kp ^b and Lu ^b and negative for Wr ^a and Co ^b .	Laki 30,12915 Tallinn, Es
Please note cell 2 in Alsevers is labelled as R144 4530 Instructions for use can be found at http://www.blood.co.uk/reagents	
Rh C D E c e C ^w M N S s P1 Lu ^a K k <u>Kp</u> ^a Le ^a Le ^b F.x ^a F.y ^b J.k ^a J.k ^b Other ^{IAT}	IAT ENZ
$1 \mathbf{R}_{1}^{W} \mathbf{R}_{1} \ + \ + \ 0 0 \ + \ + \ + \ 0 \ + \ 0 \ + \ 0 \ 0 \$	3 4
	0 0
$3 R_2R_2 0 + + + 0 0 0 + 0 + 2 0 0 + 0 + 0 - + 0 0 + + 0 - 3$	3 4
4 <u>r</u> r + 0 0 + + 0 0 + + 0 + 3 0 0 + 0 + 0 + 0	3 4
5 <u>r''r</u> 0 0 + + + 0 + 0 + 0 0 0 0 + 0 + 1 <u>1</u>	14
6 m 0 0 0 + + 0 + 0 + 3 0 + 0 0 0 + + 0 + 3 0 ± 3 0 ± 0 0 0 ± 0 ± 0 ± 0 ± 0 ± 0 ±	3 4
7 <u>m</u> 0 0 0 + + 0 + 0 + 0 4 0 + 0 + 0 + 0 + 0	3 4
8 <u>m</u> 0 0 0 + + 0 + 0 0 0 + + 0 0 3	3 4
E + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 +	3 4
10 III 0 0 0 + + 0 0 + + 0 3 0 0 + 0 0 + 3	3 4
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Story... this looked like a multiple antibody case to an inexperienced BMS

NHSBT REAGENTS Panel 1



Produc	t				Lot N	lo.			Produ	ict						Lot I	No.		Pro	duct				Lo	t No.		
ID Pan	el in Alseve	rs,			R14 1	1 352	29		ID Pa	nel Pa	paini	sed in	Alsev	ers		R15	n/a		ID I	Panel i	n LISP	1		R1	14 n/a		
ID Pan	nel in CellSta	þ			R142	2 352	29		ID Pa	nel Pa	paini	sed in	CellS	tab		R15	2 3529		Evr	niny Da	to · 20	23 04 1	3				
ID Pan	el in <u>CellMe</u>	dia			R16	n/a			ID Pa	nel Pa	paini	sed in	<u>CellM</u>	edia		R17	n/a				10.20	20.04.1	5				
Patient	's Name				(as	e G			Dett			DADA	12	Sam	ple No.			Conc	lusion							
D.O.B.						-				Patie	ent K	n/K =	R1R1 ,	K-					Teste	d by			Date				
nlose	othorwise in	dica	tod :	all c	olle a	aro n	ocitiv	o for l	(n ^b ar	d Lub	and	norati	ve for	Wra an	d Cob	6.				,							
11033	oulei wise ili	uica	ieu, i		6113 6	are p	OSILIV				and	legati		ai		•											
structio	ons for use ca	an be	e four	nd at	http:	://ww	w.bloc	d.co.u	k/rea	gents										EC REF	Qualit	y First Ir	nternational O),Laki 3	30,129	15 Talli	inn, Est
	Rh	С	D	Е	c	е	Cw	м	N	s	s	P1	Lu ^a	к	k	Kpª	Le ^a	Leb	Ey ^a	Ex	JK ^a	<mark>`∫K</mark> ⊳	Other	IAT	ENZ		
1	$\mathbf{R}_{1}^{W}\mathbf{R}_{1}$	+	+	0	0	+	1	1	0	1	0	2	0	0	+	0	0	0	-	0	0	+	Doatb+	0			
2	R ₁ R ₁	+	+	0	0	+	0	0	+	0	+	0	0	+	+	0	+	0	0	+	Đ	0	Doatb+	3			
3	R_2R_2	0	+	+	+	0	0	+	0	+	0	0	0	0	+	0	0	+	0	+	0	+	HLA+	3			
4	<u>1'1</u>	+	0	0	+	+	0	0	+	0	+	1	0	0	+	0	0	+	0	0	+	0		3			
5	<u>r''r</u>	0	0	+	+	+	0	0	+	0	+	0	0	0	+	0	+	0	+	0	+	0	Doatb+	2			
6	<u>m</u>	0	0	0	+	+	0	+	+	+	0	2	0	+	0	0	0	+	0	+	0	+		3			
7	<u>m</u>	0	0	0	+	+	0	+	0	+	0	2	0	+	+	0	0	+	+	0	+	0		3			
8	m	0	0	0	+	+	0	0	+	0	+	0	0	0	+	+	0	+	0	+	+	0	HLA+	3			
9	m	0	0	0	+	+	0	0	+	+	0	2	0	0	+	0	+	0	+	0	0	+	Cob+	3			
10	m	0	0	0	+	+	0	+	0	0	+	1	+	0	+	0	+	0	+	0	0	+	Doa-b+	3			
																		1					Δυτο				

Change in storyline... the hospital now require urgent blood for transfusion

Patient is group Opos – what blood would you provide?



Lot No.

R15 n/a

R17 n/a

R152 3529

Le^a Le^b Fy^a Fy^b

Product ID Panel in LISP

Tested b

0 0

EC REP

0 +

0 0 + Cob+

Expiry Date : 2023.04.13

Jkª Jkb

0

0 + + 0 + 0 HLA+

0 Doatb

0

Other

+ HLA+

Doa+b+

Doa-b+

Blood and Transplant

R14 n/a

	REAGENT		Panal	1																					ы	lood	and	Irans	plant	C.																
Produc	t		aner	Lot	NO.			Prod	uct							Lot	No.			Prod	uct					Lot N	lo.			1																
ID Par	el in Alseven	s		R14	4 353	0		ID Pa	anel F	apair	nised	in Als	ever	s		R15	4 353)		ID Pa	anel ir	n LISP				R146	3530																			
ID Par	el in CellStat	2		R14	3 353	0		ID Pa	anel F	apair	nised	in Cel	IStal	b		R15	3 3530	0		Eval	De De	10 . 20	122.04	20																						
ID Par	el in CellMed	lia		R16	3 353	0		ID Pa	anel F	Papair	nised	in Cel	IMeg	lia		R17	3 3530	0		Expi	Ty Dai	.e. 20	23.04.	20																						
Patient	's Name			(Case	e G			Pa	tient F	Rh/K	= R1F	R1, P	۲-	Sam	ple No.	2		C	onclu	sion																									
D.O.B.								14.1	L	-									п	ested	Бу			Date																						-
Please	otherwise inc note cell 2 in	Alsev	d, all c ers is	labe	are policed a	ositiv as R1	44 45	Кр ^в а 30	ind Li	J [®] and	i neg	ative f	or W	(rª an	nd Co					E	C REL	7												Dee												
Instructi	ons for use ca	n be fe	bund a	it http	//ww	W.DIO	od.co.	uk/rea	gents	4	1						1	1			o neo	Qualit	y First	International	100.1a	KI 30,1	12915	allinn	, Estoni	a	Prod	REAGEN	3	Par	el Z	t No			Pro	duct						_
	Rh	C	DE	c	e	C*	M	N	S	S	P	1 Lu	1ª	ĸ	k	Kp ^a	Leª	Le	. E	Y.ª	EX.	JK.	JK	Other	· *		-				ID P	anel in Alseve	rs		R1	41 3	529		IDI	Panel	Papair	nised	in Also	vers		-
1	K1^WK1	+ •	+ 0	0	+	+	+	0	+	0	0	0 0		0	+	0	0	+		+	0	\odot	0		1	3 -	4				ID P	anel in CellSta	ab		R1	42 3	529		IDF	Panel	Papair	nised	in Cell	Stab		_
2	R ₁ R ₁	+ -	+ 0	0	+	0	0	+	0	+	3	3 0		+	+	0	0	+	T i	0	+	0	+		(0 0	>	+			ID P	anel in CellMe	dia		R	16 n/a	1		ID F	anel	Papair	nised	in Cell	Media		_
3	R ₂ R ₂	0	+ +	+	0	0	0	+	0	+	2	2 0		0	+	0	+	0	1	0	+	+	0		2	3 -	4				Patie	nt's Name			- 10	Са	se G	;		Pa	atient	Rh/K	= R1R	1. K-	Sa	am
4	<u>rir</u>	+	0 0	+	+	0	0	+	0	+	3	3 0		0	+	0	+	0	1	+	0	+	0	Do(atb-	-) 3	3 -	4				D.O.8	3.									a office of					
5	r"r	0	0 +	+	+	0	+	0	+	0	0	0 0		0	+	0	0	+		+	0	0	+		3	1 -	4	1			Unles	s otherwise in	dicat	ed, a	II cell	s are	posit	live fo	or Kpb	and L	u ^b and	l nega	tive fo	r Wrª	and C	o
6	π	0	0 0	+	+	0	+	+	0	+	3	5 0		+	0	0	0	+	1	+	0	+	0		3	3 -	4	1	1		Instruc	tions for use o	an be	foun	d at h	ttp://w	ww bl	lood c	o uk/m	eagent	IS .					
7	π	0	0 0	+	+	0	+	0	+	0	4	1 0		+	+	0	+	0	1	0	+	+	0	HLA+	4	3 -	4					Rh	c	D	E	c	e C	- N	AN	I S	s	P1	Lu	ĸ	k	
8	π	0	0 0	+	+	0	+	0	0	+	0	0		0	+	+	0	+	1	0	+	0	+		1	3 -	4						-	+	0	•			1	\pm	-	-		+	+	_
9	π	0	0 0	+	+	0	0	+	0	+	0	1 +		0	+	0	+	0		0	+	0	+		14	3 -	4				-		Ť	-	0			£				- 2	+	+ ·	+ -	-
10	π	0	0 0	+	+	0	0	+	+	0	3	5 0		0	+	0	0	+		+	0	0	+		3	3 -	4	Τ			4	R1R1	+	+	0	0.	+ 0	–	<u>'</u> +†	0	++	0	0	+*	+	<u> </u>
											\top						1		\top		-		AUTO	,	(0					3	R ₂ R ₂	0	+	+ •	+ 1	0 0	<u>'</u>	<u>+ 0</u>	<u>'</u> +	. 0	0	0	10	+	<u> </u>
			-	+				1	+	+	1	+					1	1	1	-	-		-				1	+	1		4	<u>t't</u>	+	0	0	+ •	+ 0	, 0) +	· 0) +	1	0	0	+	۲
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																														۲	6	33	0	0	0	+ -	+ 0	1 +	+ +	+ +	. 0	2	0	+	0)
																															7	π	0	0	0	+ •	+ 0	1 4	+ 0	+	. 0	2	0	+	+	۴
																															8	rr	0	0	0 .	+ •	+ 0) + C	. 0	+ (0	0	0	+	+

BMS issued: OPos R1R1, K-, Jka- blood

Was this the right decision?

Anti-E, anti-c and anti-Jka have not been excluded

0 2

0

0 0 0

0 0 0

10

According to BSH guidelines, we can designate an anti-Jka specificity.

The BMS proceeded to perform an R1R1 panel...





Blood and Transplant

NHSE	BT REAGE	ENTS				Ca	se G			Pr	odu	: <u>t</u> :	Pan Pan	el 1 ir el 1 ir	Also Cell	evers stab	Lot Lot	No No	: R2 : R2	01 328 02 328	36 36	Exp	oiry <u>date</u>	: 2023	.04	.06	
Patient	's Name						F	Reques	stor						He	matos F	Ref No.					Test	ed by				
Date of	Birth						ŀ	losp N	lo.						Sa	mple No	b .					Date	Tested				
Unless o	otherwise in	dicated	d, all	cells	are p	ositiv	ve for	Xp ⁵ an	d Lu ^b a	nd ne	gative	for Wr	and C	о ^ь .													
	Rh	c	D	E	c	e	Cw	м	N	S	s	P1	Luª	к	k	Kpª	Le ^a	Le	Exa	Ex⊳	<mark>Jk</mark> ª	<mark>`}K</mark> ⊳	Other	IAT	(
1	R1wR1	+	+	0	0	+	+	0	+	0	+	3	0	0	+	0	0	+	0	+	0	+	HLA+	0			
2	R1wR1	+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0	Jka	4			
3	R1RZ	+	+	1	0	+	0	+	+	0	+	0	0	0	+	0	0	+	+	0	0	+		0			
4	RZĽ	+	+	+	0	+	0	+	+	0	+	0	0	0	+	0	+	0	0	+	+	0	Jka	4			
5	Ror	0	+	0	+	+	0	0	+	0	+	3	0	0	+	0	0	+	0	0	+	0	Jka, c	5			
6	R1R1	+	+	0	0	+	0	+	+	0	+	0	0	+	0	0	0	+	+	0	0	+	-	0			
7	R1R1	+	+	0	0	+	0	+	0	+	0	0	0	+	+	0	0	0	0	w	+	0	Jka	4			
8	R1r'	+	+	0	0	+	0	0	+	0	+	2	0	0	+	+	+	0	0	+	0	+	HLA+	0			
9	R1R1	+	+	0	0	+	0	+	0	+	+	3	+	0	+	0	0	+	w	0	0	+	Bga+	0			
10	R1R1	+	+	0	0	+	0	0	+	+	0	0	0	0	+	0	0	+	+	0	0	+		0			
	-																										

Anti-c & anti-Jka



Reference Panel 1 Profile



Shall we try solving a more difficult case?...

Caring Expert Quality



IHSBT REAGENTS P	anel 1				
Product	Lot No.	Product	Lot No.	Product	Lot No.
ID Panel in Alsevers	R144 3530	ID Panel Papainised in Alsevers	R154 3530	ID Panel in LISP	R146 3530
ID Panel in CellStab	R143 3530	ID Panel Papainised in CellStab	R153 3530	Euroime Data + 2022 04 20	*
ID Panel in CellMedia	R163 3530	ID Panel Papainised in CellMedia	R173 3530	Expiry <u>Date :</u> 2023.04.20	
Patient's Name		Ref. No.	Sample No.	Conclusion	
D.O.B.	Patient with AIHA			Tested by Da	ite

Unless otherwise indicated, all cells are positive for Kp^b and Lu^b and negative for Wr^a and Co^b. Please note cell 2 in <u>Alsevers</u> is labelled as R144 4530

Instruct	ions for use ca	an be	e fou	nd at	http	://ww	w.bloc	d.co.u	uk/reag	gents										EC RE	Qualit	y First In	ternational QÜ	Laki 3	30,129	15 Tal	linn, E	stonia	3
	Rh	С	D	E	c	е	Cw	м	N	S	s	P1	Lu ^a	к	k	Kpª	Le ^a	Leb	Ey ª	Ey	JK.ª	<mark>`îk</mark> ₽	Other	GEL IAT	Gel ENZ	Tube IAT			
1	$\mathbf{R}_1^{W}\mathbf{R}_1$	+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		3	4	2			
2	R ₁ R ₁	+	+	0	0	+	0	0	+	0	+	3	0	+	+	0	0	+	0	+	0	+		3	4	2			
3	R ₂ R ₂	0	+	+	+	0	0	0	+	0	+	2	0	0	+	0	+	0	0	+	+	0		3	4	2			
4	r'r	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(atb-)	3	4	2			
5	<u></u>	0	0	+	+	+	0	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		M	4	2			
6	<u></u>	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		3	4	2			
7	II	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0	+	0	0	+	+	0	HLA+	3	4	2			
8	<u>II</u>	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		M	4	2			
9	<u>III</u>	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+		M	4	2			
10	π	0	0	0	+	+	0	0	+	+	0	3	0	0	+	0	0	+	+	0	0	+		M	4	2			
																						AUTO		3					
F	Reagent														DAT	Profile	Ar	nti-IgG		lgA		lgM	C3c		C	3d		Ctrl	
I	_ot No.														Re	esult		4		0		0	0		0	2		0	

Can you identify the antibody(ies)?

Send to RCI??





PROBLEM

- Panreactive by IAT and Enzyme IAT
- Auto = Positive

Unable to exclude the presence of alloantibodies





NHSBI	REAGENT	s	Pa	nel	1																			Dioc			unsp	mane
Produ	ot				Lot N	No.			Produ	ıct						Lot	No.		Pro	duct				Lo	t No.			
ID Par	nel in Alseve	rs			R14	4 353	30		ID Pa	nel Pa	apaini	sed in	Alsev	ers		R15	4 3530		IDI	Panel i	n LISF)		R1	46 3	530		
ID Par	nel in CellSta	b			R14	3 353	30		ID Pa	nel Pa	apaini	sed in	CellSt	tab		R15	3 3530		-									
ID Par	nel in CellMe	dia			R16	3 353	30		ID Pa	nel Pa	apaini	sed in	CellM	edia		R17	3 3530		- Ext	biry Da	<u>ite :</u> 20	23.04.2	0					
Patien	t's Name									Ref.	No.				Sam	nple No.			Conc	lusion								
D.O.B.				Pa	atie	nt w	ith A	IHA											Teste	d by			Date					
Unless Please	otherwise in note cell 2 in ons for use c	dica Also an be	ted, ever e fou	all c s is nd at	ells a labe t <u>http</u>	are p lled a ://ww	oositiv as R14 w.bloo	e for 44 45: od.co.	Kp ^b ai 30 uk/rea	nd Lu	^b and	negat	ive for	<mark>₩r</mark> ª ai	nd <u>Co</u>	<u>ь</u> .				EC REI	PQualit	y First Ir	nternational QÜ	Laki 3	30,129)15 Ta'	llinn, i	Estonia
	Rh	С	D	E	c	e	Cw	м	N	s	s	P1	Lu ^a	к	k	Kpª.	Le ^a	Le	<mark>Ey.</mark> ª	Exp	<u></u> Υκ.	<mark>`îk</mark> ⊧	Other	GEL IAT	Gel ENZ	Tube IAT		
1		+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		3	4	2		
2	R₁R₁	+	+	0	0	+	0	0	+	0	+	3	0	+	+	0	0	+	0	+	0	+		3	4	2		
3	R_2R_2	0	+	+	+	0	0	0	+	0	+	2	0	0	+	0	+	0	0	+	+	0		3	4	2		
4	<u>r'r</u>	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(atb-)	3	4	2		
5	r``r	0	0	+	+	+	0	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		3	4	2		
6	m	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		3	4	2		
7	π	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0		Pla		Donro	ootiw		HLA+	3	4	2		
8	<u>m</u>	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+		Auto	contr	ol = P	os itiv	2 8		3	4	2		
9	m	0	0	0	+	+	2		1 +	1	1 +	1	1 .	0	+	0								3	4	2		
10	<u>π</u>	0	0	0	+	+		D	AT =	Posi	tive b	y IgG	3	0	+	0	0	+	+	0	0	+		3	4	2		
								LIK	ely pi au	itoan	tibody	i wan /	" (AUTO		3				
									1			1																
1000																												
R	eagent								ļ						DAT	Profile	Ar	nti-IgG	_	lgA		lgM	C3c		C	3d	\perp	Ctrl
1 1	.ot No.														R	esult	-	4		0		0	0		(2		0

Patient has AIHA

How do we remove the autoantibody to be able to exclude alloantibodies?



Adsorptions

1. AUTOadsorption

- Patient's <u>OWN</u> red cells mixed with patient plasma
- autoantibody attaches to patient's own red cell
- any alloantibody remains in the plasma

Problem

- Patient must not be recently transfused
- Patient must have sufficient red cells, a good Hb

Mostly our patient's do not fulfil these criteria, so we must alloadsorb





2. ALLOadsorption

- Donor (or commercial) red cells mixed with patient plasma
- donor red cells adsorb autoantibody
- alloantibody remains in adsorbed plasma

Properties of adsorption cells being used:

- Phenotype matched to patient
- Papain treated

What if we don't know the patient's phenotype? How do we select adsorption cells to use?





Commercial cells (OR₁R₁, OR₂R₂ and Orr) - designed for adsorptions

Lot Number	Rh	С	D	Е	С	е	Cw	ĸ	Jkª	JKb
D 405 2507	R ₁ R ₁	+	+	0	0	+	0	0	+	0
K405 3597	ж	0	0	0	+	+	0	+	0	+
R404 all lots	R ₂ R ₂	0	+	+	+	0	0	0	+	+





RCI can perform adsorptions with 3 different papain treated adsorption cells:

- 1. R1R1
- 2. rr
- 3. R2R2

At least 1 of these cells must be:

- Jka-
- Jkb-
- K-







Finally...

test the remaining adsorbed plasma against an antibody ID panel by IAT

Hopefully, any clinically significant antibody to a common red cell antigen should remain in (at least) one of the 3 adsorbed plasma!

What's the biggest risk of alloadsorption??

The adsorption cells may adsorb out a clinically significant alloantibody - Especially a high frequency antibody

3 Papain treated adsorption cells



Lot Number	Rh	С	D	E	с	е	Cw	к	Jkª	<mark>Jk</mark> ⊳
D405 2507	R ₁ R ₁	+	+	0	0	+	0	0	+	0
R405 3597	m	0	0	0	+	+	0	+	0	+
R404 all lots	R ₂ R ₂	0	+	+	+	0	0	0	+	+

Any alloantibody in the adsorbed plasma?

Produ	ct				Lot N	NO.			Produ	ct						Lot N	No.		Pro	duct				Lo	t No.				
D Pai	nel in Alsever	rs.			R14	4 353	30		ID Pa	nel Pa	paini	sed in	Alsev	ers		R15	4 3530		ID I	Panel i	n LISF)		R1	46 35	530			
) Pai	nel in CellSta	þ			R14	3 353	30		ID Pa	nel Pa	paini	sed in	CellS	ab		R15	3 3530		Ev	ainy Dat	to · 20	23 04 2	0						
) Pai	nel in CellMed	dia			R16	3 353	30		ID Pa	nel Pa	paini	sed in	CellM	edia		R17	3 3530		LY		20	23.04.2							
atien	t's Name									Ref.	No.				Sam	ple No.			Conc	lusion									
.0.В.				Ρ	atie	nt w	ith A	IHA											Teste	d by			Date						
less	otherwise in	dica	ted, a	all c	ells	are p	ositiv	e for	Kp ^b ar	nd Lu ^t	and	negat	ive for	Wr ^a a	nd Co														
ase	note cell 2 in	Als	ever	ș is	labe	lled a	as R14	14 453	30	1114-									Г	EC PEC									
truct	ons for use ca	an be I	e four	nd a	it <u>http</u>	://ww	/w.bloc	od.co.	uk/rea	gents			r –								Qualit	ty First Ir	ternational QU	Laki	30,129	15 Tal	linn, E	stonia	D 2 D 2
	Rh	C	D	E	C	е	C.	м	N	S	S	P1	Lu ^a	к	k	Kpa	Le ^a	Le	Ex.ª	EX.	JKa	ĭk ₽	Other	IAT	ENZ	IAT	IAT	IAT	IAT
1		+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	+	0		3	4	2	0	2	0
2	R ₁ R ₁	+	+	0	0	+	0	0	+	0	+	3	0	+	+	0	0	+	0	+	0	+		3	4	2	0	0	0
3	R ₂ R ₂	0	+	+	+	0	0	0	+	0	+	2	0	0	+	0	+	0	0	+	+	0		3	4	2	0	2	0
4	<u>r'r</u>	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	+	0	Do(atb-)	3	4	2	0	2	0
5	ניינ	0	0	+	+	+	0	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		3	4	2	0	0	0
6	π	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		3	4	2	0	2	0
7	π	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0	+	0	0	+	+	0	HLA+	3	4	2	0	2	0
8	π	0	0	0	+	+	0	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		3	4	2	0	0	0
9	π	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+		3	4	2	0	0	0
10	π	0	0	0	+	+	0	0	+	+	0	3	0	0	+	0	0	+	+	0	0	+		3	4	2	0	0	0
					1		1															AUTO		3			Ac	Isorb	he
		-																									pla	asma	su
										8																			
R	leagent			Τ											DAT	Profile	Ar	nti-IgG		lgA		lgM	C3c	Τ	C	3d		Ctrl	
1	ot No.														Re	esult		4		0		0	0		(2		0	

Why is anti-Jka only detected with rr adsorbed plasma?



Produ	ct				Lot N	lo.			Produ	ct						Lot N	No.		Pro	duct				Lot	No.				
ID Par	nel in Alseve	rs			R144	1 353	30		ID Par	nel Pa	paini	sed in	Alsev	ers		R15	4 3530	9	IDF	Panel i	n LISP	0		R14	46 35	30			
ID Pai	nel in CellSta	b			R143	3 353	30		ID Par	nel Pa	paini	sed in	CellS	ab		R15	3 3530	0	Evr		to · 20	22 04 2	n						
ID Pai	nel in <u>CellMe</u>	dia			R163	3 353	30		ID Par	nel Pa	paini	sed in	CellM	edia		R17	3 3530	8			10 . 20	23.04.20							
Patien	t's Name									Ref.	No.				Sam	ple No.			Conc	usion									
D.O.B.				Pa	atier	nt w	ith A	IHA											Teste	d by			Date						
nless lease	otherwise in note cell 2 in ons for use c	ndica Als an be	ted, a ever: e foui	all c s is nd at	ells a label t http	are p led a	ositiv as R14 w.bloc	e for (14 453 od.co.(Kp ^b an 0 uk/reac	nd Lu ^t	[,] and i	negati	ve for	Wrª ai	nd <u>Co</u> t				C	EC REF	Qualit	v First In	ternational OÜ.	Laki 3	0.129	15 Tallir	nn. Es	tonia	а
	Rh	c	D	E	c	e	C.	м	N	S	s	P1	Lu ^a	к	k	Kpª.	Le ^a	Le ^b	Ey ^a	Ex.	<u>Jk</u> ª	<mark>`}K</mark> ₽	Other		• • 1	R	IR1 AT	и IAT	R2
1	R 1 ^W R 1	+	+	0	0	+	/	+	0	+	0	0	0	0	+	0	0	+	+	0	Đ	0					0	2	120
2	R ₁ R ₁	1	1	0	0	1	0	0	-	0	-	2	0	-	-	0	0	1	0	1	0	1					0	0	
3	R ₂ R ₂	0	+	+	+	0	0	0	+	0	+	2	0	0	+	0	+	0	0	+	(\mathbf{f})	0					0	2	(
4	<u>r'r</u>	+	0	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	+	0	Ť	0	Do(atb-)				0	2	1
5	<u>c''c</u>	0	0	*	1	+	0	1	0	+	0	0	0	0	+	0	0	+	1	0	0	+					0	0	
6	π	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	$(\mathbf{+})$	0					0	2	
7	n	0	0	0	+	+	0	+	0	+	0	4	0	+	+	0	+	0	0	+	Ŧ	0	HLA+				0	2	(
8	n	0	0	0	+	+	0	+	0	0	+	0	0	0	+	1	0	+	0	+	0	+		1			0	0	(
9	π.	0	0	0	+	+	0	0	+	0	+	0	1	0	+	0	/	0	0	+	0	+					0	0	(
10	n	0	0	0	+	+	0	0	+	4	0	3	0	0	+	0	0	+	+	0	0	+					0	0	(
				-										-								AUTO					Ads plas	orb sma	ed
F	Reagent		-					-							DAT	Profile	Ar	nti-IgG		lgA		lgM	C3c		C3	d		Ctr	
1	_ot No.														Re	esult		4		0		0	0		0)	1	0	

Lot Number	Rh	С	D	Е	с	е	Cw	к	Jka	JK.
D 405 0507	R ₁ R ₁	+	+	0	0	+	0	0	+	0
R405 3597	E	0	0	0	+	+	0	+	0	+
R404 all lots	R ₂ R ₂	0	+	+	+	0	0	0	+	+





Patient X

Male, 62 year old

Diagnosed with Multiple Myeloma

Group OPos, R1R1 K-



	Rh	С	D	Е	с	е	Ç	М	N	s	s	P1	Luª	к	k	Kpa	Lea	Le₀	Eya	Eye	<mark>JK</mark> a	JK b	Other	IAT	ENZ	
1	R ₁ ^w R ₁	+	+	0	0	+	+	0	+	0	+	4	0	0	+	0	+	0	+	0	+	0		2	2	
2	R 1 R 1	+	+	0	0	+	0	+	0	+	0	3	0	+	+	0	+	0	0	+	0	+		2	2	
3	R ₂ R ₂	0	+	+	+	0	0	0	+	0	+	0	0	0	+	0	0	+	+	0	0	+		2	2	
4	<mark>2'2</mark>	+	0	0	+	+	0	+	0	+	0	4	0	0	+	0	+	0	+	0	+	0		2	2	
5	ניינ	0	0	+	+	+	0	+	0	+	0	3	0	0	+	0	+	0	0	+	+	0		2	2	
6	<mark>تې</mark>	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		2	2	
7	R	0	0	0	+	+	0	0	+	0	+	0	0	+	+	0	0	+	0	+	0	+		2	2	
8	Ω.	0	0	0	+	+	0	+	0	0	+	3	0	0	+	+	+	0	0	+	0	+		2	2	
9	<mark>s:</mark>	0	0	0	+	+	0	+	0	0	+	1	+	0	+	0	0	+	0	+	0	+		2	2	
10	<mark>tt</mark>	0	0	0	+	+	0	0	+	+	0	4	0	0	+	0	0	0	0	+	+	0		2	2	
																							Auto	0		

What are your thoughts?

Patient is on DARATUMUMAB!





Diagram showing how daratumumab interferes with the antibody screen (Chari et al., 2018)





No antibody detected using DTT treated panel cells

	Rh	с	D	Е	c	e	G	м	N	s	s	P1	Luª	к	k	Kpa	Lea	Le₀	Exa	Eya	Jka	<u>Jk</u>	Other	IAT	ENZ	DTT Gel IAT
1	R ₁ ^w R ₁	+	+	0	0	+	+	0	+	0	+	4	0	0	+	0	+	0	+	0	+	0		2	2	0
2	R 1 R 1	+	+	0	0	+	0	+	0	+	0	3	0	+	+	0	+	0	0	+	0	+		2	2	0
3	R ₂ R ₂	0	+	+	+	0	0	0	+	0	+	0	0	0	+	0	0	+	+	0	0	+		2	2	0
4	<u>1'1</u>	+	0	0	+	+	0	+	0	+	0	4	0	0	+	0	+	0	+	0	+	0		2	2	0
5	r" .r	0	0	+	+	+	0	+	0	+	0	3	0	0	+	0	+	0	0	+	+	0		2	2	0
6	<mark>11</mark>	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		2	2	0
7	<mark></mark>	0	0	0	+	+	0	0	+	0	+	0	0	+	+	0	0	+	0	+	0	+		2	2	0
8	<mark>tt</mark>	0	0	0	+	+	0	+	0	0	+	3	0	0	+	+	+	0	0	+	0	+		8	2	0
9	<mark>tt</mark>	0	0	0	+	+	0	+	0	0	+	1	+	0	+	0	0	+	0	+	0	+		2	2	0
10	х.	0	0	0	+	+	0	0	+	+	0	4	0	0	+	0	0	0	0	+	+	0		2	2	0
																							Auto	0		

0.2 M Dithiothreitol (DTT) treated red blood cells will <u>not</u> react with antibodies in the Kell blood group system nor with some examples of anti -Ge, - Yta and some HTLA antibodies.

Could this information be helpful in completing complex antibody investigations?





Patient Y

- A pre-op sample is referred from a Hospital Blood Bank on a 33 year old male.
- He underwent major surgery last year, during which he received six units of electronically issued blood.
- Group A RhD Negative, rr (C-c+E-e+) K-





						_	_	Pane	el 1								Cal	Ena	
	Rh	М	N	S	s	P1	Lua	К	k	Кра	Lea	Leb	Fya	Fyb	Jka	Jkb	Gei		
1	$R_1^W R_1$	0	+	0	+	0	0	0	+	+	0	+	+	0	0	+	2	4	
2	R_1R_1	+	0	+	0	4	0	+	+	0	0	+	0	+	+	0	4	4	
3	R_2R_2	+	0	0	+	4	0	0	+	0	+	0	+	0	+	0	4	4	
4	r'r	0	+	+	+	2	0	0	+	0	+	0	0	+	0	+	4	4	
5	r"r	0	+	+	0	4	0	0	+	0	0	+	0	+	0	+	4	4	
6	rr	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0	4	4	
7	rr	0	+	0	+	3	0	+	+	0	+	0	+	0	0	+	4	4	
8	rr	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	2	4	
9	rr	+	0	+	0	3	+	0	+	0	0	+	0	+	+	0	4	4	
10	rr	0	+	+	0	0	0	0	+	0	0	+	+	0	+	0	4	4	
															AU	то	0		
							DA	٩T	lgG	lgM	lgA	C3c	C3d	Ctl					
									0	0	0	0	0	0					

What are your thoughts on this?



Results obtained vs Rare cell panel

																		Cal
	Rh	М	N	S	s	P1	Lua	К	k	Кра	Lea	Leb	Fya	Fyb	Jka	Jkb	Other	Gei
Rare Cell	rr	+	0	+	+	+	0	0	+	0	+	0	0	+	0	+	Kpb-	0
Rare Cell	R1R1	+	0	0	+	+	0	0	+	0	0	+	+	+	0	+	Kpb-	0
L		•		•	•		•					•				A	UTO	

Any idea what antibody it is?



	Rh	М	N	S	s	P1	DTT T	Гreate к	d Pan	el 1 Kpa	Lea	Leb	Fya	Fyb	Jka	Jkb	DTT Gel IAT	
1	$R_1^W R_1$	0	+	0	+	0	0	0	+	+	0	+	+	0	0	+	0	
2	R_1R_1	+	0	+	0	4	0	+	+	0	0	+	0	+	+	0	0	
3	R_2R_2	+	0	0	+	4	0	0	+	0	+	0	+	0	+	0	0	
4	r'r	0	+	+	+	2	0	0	+	0	+	0	0	+	0	+	0	
5	r"r	0	+	+	0	4	0	0	+	0	0	+	0	+	0	+	0	
6	rr	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0	0	
7	rr	0	+	0	+	3	0	+	+	0	+	0	+	0	0	+	0	
8	rr	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+	0	
9	rr	+	0	+	0	3	+	0	+	0	0	+	0	+	+	0	0	
10	rr	0	+	+	0	0	0	0	+	0	0	+	+	0	+	0	0	
										•					AU	то	0	

An antibody to which blood group system?

Anti-Kpb



Case Z

Female neonate born pale and floppy with underlying jaundice <u>Cord blood hb = 42g/L</u> Blood group: Apos, Antibody screen = Negative DAT = 3+ by IgG

Mother

Blood group: Apos Antibody screen: Negative No previous history of blood transfusions

What are your thoughts?



Consultant suspects HDFN – What further analysis could help your investigation based on serological results?



Neonate panel results

	Rh	с	D	Е	c	e	<u>C**</u>	м	N	s	s	P1	Luª	к	k	Kpa	Lea	Le₅	Eya	Ey _b	Jka	Jk⊾	Other	IAT	ENZ	Eluate	
1	R ₁ ^w R ₁	+	+	0	0	+	+	0	+	0	+	4	0	0	+	0	+	0	+	0	+	0		0	0	0	
2	R1R1	+	+	0	0	+	0	+	0	+	0	3	0	+	+	0	+	0	0	+	0	+		0	0	0	
3	R ₂ R ₂	0	+	+	+	0	0	0	+	0	+	0	0	0	+	0	0	+	+	0	0	+		0	0	0	
4	<u>r'r</u>	+	0	0	+	+	0	+	0	+	0	4	0	0	+	0	+	0	+	0	+	0		0	0	0	
5	<u>r"r</u>	0	0	+	+	+	0	+	0	+	0	3	0	0	+	0	+	0	0	+	+	0		0	0	0	
6	π	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		0	0	0	
7	<u>π</u>	0	0	0	+	+	0	0	+	0	+	0	0	+	+	0	0	+	0	+	0	+		0	0	0	
8	π	0	0	0	+	+	0	+	0	0	+	3	0	0	+	+	+	0	0	+	0	+		0	0	0	
9	π	0	0	0	+	+	0	+	0	0	+	1	+	0	+	0	0	+	0	+	0	+		0	0	0	
10	π	0	0	0	+	+	0	0	+	+	0	4	0	0	+	0	0	0	0	+	+	0		0	0	0	

Mothers panel results

	Rh	с	D	Е	c	e	<u>c</u>	м	N	s	s	P1	Luª	к	k	Kpa	Lea	Le₅	Eya	Fy ⊳	<u>Jka</u>	Jk⊾	Other	IAT	ENZ	Eluate	
1	$R_1^W R_1$	+	+	0	0	+	+	0	+	0	+	4	0	0	+	0	+	0	+	0	+	0		0	0	0	
2	R1R1	+	+	0	0	+	0	+	0	+	0	3	0	+	+	0	+	0	0	+	0	+		0	0	0	
3	R ₂ R ₂	0	+	+	+	0	0	0	+	0	+	0	0	0	+	0	0	+	+	0	0	+		0	0	0	
4	<u>r'r</u>	+	0	0	+	+	0	+	0	+	0	4	0	0	+	0	+	0	+	0	+	0		0	0	0	
5	<u>r"r</u>	0	0	+	+	+	0	+	0	+	0	3	0	0	+	0	+	0	0	+	+	0		0	0	0	
6	π	0	0	0	+	+	0	+	+	0	+	3	0	+	0	0	0	+	+	0	+	0		0	0	0	
7	π	0	0	0	+	+	0	0	+	0	+	0	0	+	+	0	0	+	0	+	0	+		0	0	0	
8	<u>π</u>	0	0	0	+	+	0	+	0	0	+	3	0	0	+	+	+	0	0	+	0	+		0	0	0	
9	π	0	0	0	+	+	0	+	0	0	+	1	+	0	+	0	0	+	0	+	0	+		0	0	0	
10	π	0	0	0	+	+	0	0	+	+	0	4	0	0	+	0	0	0	0	+	+	0		0	0	0	
			0.00																								



Eluate performed on neonate sample = Negative

Who could you consider testing next?

Father!

Antibody panel = Negative

Now what?

IAT testing performed:

Maternal plasma vs neonate rbc's = 3+ reaction Paternal plasma vs neonate rbc's = No reaction Maternal plasma vs paternal rbc's = 3+ reaction



Tested Maternal plasma vs rare cell panel

		-				-	-	-			-	-	-	-	-	-		Gal
	Rh	М	N	s	s	P1	Lua	К	k	Кра	Lea	Leb	Fya	Fyb	Jka	Jkb	Other	Uei
Rare Cell	rr	+	0	+	+	+	0	0	+	0	+	0	0	+	0	+	Kpb-	0
Rare Cell	R1R1	+	0	0	+	+	0	0	+	0	0	+	+	+	0	+	Kpb-	0
																	U-	0
																	Ch-	0
																(Wra+	3+
																	Rg-	0
																	Cord	0
																	Cord	0
					•											A	UTO	

Phenotype performed: Father = Wra+, Mother = Wra-, Cord = Wra+



Case Z

Neonate with severe HDFN caused by anti-Wra

The Wra antigen is a clinically significant antigen in the Diego blood group system and is a rare cause of haemolytic disease of the newborn (HDFN).

During pregnancy, sensitization may occur in a Wra negative mother with a Wra positive neonate

- inherited the Wra antigen from the father.

HDFN can occur in the first pregnancy

Neonate successfully managed with transfusion, phototherapy, and highdose intravenous immunoglobulin.



Any questions??

Contact me!

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Thank you for listening

