

# Report of the 13<sup>th</sup> Flow and Virtual Crossmatch Exchange

## June 4, 2018

Cells	73-74
Serum	75-78

For the 13<sup>th</sup> Flow and Virtual Crossmatch Exchange, Serum 71 (patient 1) and virtual donor V2 from Flow Crossmatch Exchange 12 (March 2018) were re-examined as serum 75 and cell 73. A comparison of virtual crossmatch (VXM) predictions (serum 71 vs. V2) against the physical flow crossmatch (FXM) (**serum 75 vs. cell 73**) are summarized in **Part 1** of this report.

**Part 2** examines the single antigen data for the 4 sera tested (**serum nos. 75 - 78**). **Part 3** summarizes the flow crossmatch results for 2 cells (**cell nos. 73 - 74**) against the 4 sera. Finally, in **Part 4**, the virtual crossmatch predictions for 4 potential donors (V1 - V4) against 2 sera (serum 77 and serum 78) are examined.

### Part 1

## Physical Flow Cytometric Crossmatch vs. Virtual Crossmatch

Among the 21 labs submitting VXM predictions for **serum 71 vs. donor V2** in Exchange 12, 15 reported back physical T-cell FXM results and 14 reported back physical B-cell FXM results for the patient-donor pair (**serum 75 vs. cell 73**) in Exchange 13 (Table 1a). In contrast to virtual T-cell predictions, good agreement was achieved for the physical T-cell FXM, as 15/15 labs reported it as negative. All 10 of the labs which had predicted the

T-cell crossmatch to be negative in Exchange 12 reported the physical crossmatch as negative, in agreement with predictions (Table 1b). Good agreement was also observed for the physical B-cell FXM, as 14/14 labs reported it as negative. The 13 labs which had predicted the B-cell crossmatch to be negative in Exchange 12 reported the physical crossmatch as negative (Table 1b), in agreement with predictions.

**Table 1a. Summary of Physical Flow crossmatch results vs. Virtual Crossmatch predictions - Direct comparison**

Exchange 012					Exchange 013				
Virtual Crossmatch - Serum 71 (Patient 1) vs. Donor V2					Physical Flow Crossmatch - Serum 75 vs. Cell 73				
Donor	Serum no.	#Labs	T-cell Prediction	B-cell Prediction	Donor	Serum no.	#Labs	T-cell Results	B-cell Results
V2	71	15	NEG(10) POS(1) Borderline(3) U(1)	NEG(13) POS(1) Borderline(1)	73	75	15	NEG(15)	NEG(14) NT(1)

< 80% agreement

**Table 1b. Direct comparison of Physical Flow Crossmatch results vs. Virtual Crossmatch results**

Physical Flow XM (Exchange 12)		T-cell Virtual XM (Exchange 11)				B-cell Virtual XM (Exchange 11)		
		+	-	∅		+	-	∅
+								
-		1	10	4			13	1
∅						1		

+ = positive

- = negative

∅ = uncertain/not typed

n = number of labs

The reporting of DSA and DSA strength was consistent across the 2 studies. In Exchange 12, weak anti-Cw5 (1724) reactivity was reported by 8 labs against virtual donor V2, resulting in 3 labs predicting the physical T-cell FXM to be borderline, and 1 lab unable to predict it. The remainder of the labs reported no class I or class II DSA were present. In Exchange 13,

anti-Cw5 reactivity of similar strength (1749) was re-reported by 5 of the 8 labs from Exchange 12. The remainder of the labs did not report the presence of class I or class II DSA against cell 73. The variability observed in the reporting of DSA may be due to center practice, as MFI cut-offs for reporting DSA may vary among labs.

**Table 1c. Individual Physical Flow Crossmatch results vs. Virtual Crossmatch predictions - Direct Comparison**

Cell #073 HLA Genotype: A\*02:01-B\*40:05-B\*44:02:01G-C\*05:01-C\*07:02:01G-DRB1\*04:01-DRB1\*14:02-DRB3\*01:01:02G-DQA1\*03:01:01G-DQA1\*05:01:01G- DQB1\*03:01-DPB1\*02:01

Exchange 012					Exchange 013				
Virtual Crossmatch - Patient MX-071 vs. Donor V2					Physical Flow Crossmatch - Serum 75 vs. Cell 73				
Center	Virtual T-cell Prediction	Class I DSA (MFI)	Virtual B-cell Prediction	Class II DSA (MFI)	Center	T-Cell RESULT	Class I DSA (MFI)	B-Cell RESULT	Class II DSA(MFI)
206	Negative	No DSA	Negative	No DSA	206	Negative	no DSA	Negative	no DSA
230	Negative	No DSA	Negative	No DSA	230	Negative		Negative	
774	Negative	No DSA	Negative	No DSA	774	Negative	no DSA	Negative	
792	Negative	Cw5 (1410)	Negative	No DSA	792	Negative	C*05:01 (1552)	Negative	no DSA
1160	Borderline	Cw5 (1600)	Borderline		1160	Negative	Cw5 (1056)	Negative	no DSA
2400	Negative		Negative		2400	Negative	no DSA	Negative	no DSA
3224	Undetermined	Cw5 (2684)	Negative		3224	Negative	Cw5 (3824)	Negative	no DSA
3753	Negative	No DSA	Negative	No DSA	3753	Negative	no DSA	Negative	no DSA
3966	Negative		Negative		3966	Negative	-	Negative	-
4661	Negative	A2 (166) B50 (100) B44 (123) Cw5 (179) Cw7 (100)	Negative	DR4 (75) DR14 (69) DR52 (39) DR53 (80) DQ7 (57) DPw2 (72)	4661	Negative	B*40:01 (1505)	Negative	no DSA
8001	Borderline	Cw5 (1691)	Negative		8001	Negative	C*05:01 (2016)	Negative	no DSA
8050	Negative	Cw5 (1724)	Negative		8050	Negative	Cw5 (2749)	Negative	no DSA
8083	Negative	Cw5 (2405)	Negative		8083	Negative	no DSA	Negative	no DSA
8096	Positive	A2 (3588) B44 (4408) Cw5 (2710)	Positive	DR4 (393)	8096	Negative	-	NT	-
8103	Borderline	B40 (2882)	Negative		8103	Negative	no DSA	Negative	no DSA

## Part 2

Class I and class II Luminex single antigen results for serum samples 75 - 78 are summarized in Tables 12 - 15 and individual results for each

participating laboratory are listed in Tables 16 –21.

### Antibody Identification

**Serum 75** was previously examined as serum 71 (Exchange 12). In this present study, A1, B41, B42, B60, B7, B8, B48, and B59 antibodies were reported with  $\geq 90\%$  consensus. Median MFI values reported were similar to those reported in Exchange 12, ranging from 6157 to 22532. Anti-DQ5 (4263) reactivity was detected by 100%.

The reporting of DSA for this serum against the 2 cells examined in this study, cells 73 and 74, were mixed among labs. Against cell 73 (donor V2 from exchange 12) weak anti-Cw5 (2654) reactivity was re-reported by 8 labs. A number of labs (n=8) indicated no class I DSA were present against cell 73. Against cell 74, 9 labs reported weak anti-A24 (2672) reactivity, while 8 reported no class I DSA were present. With the exception of 1 lab reporting DPB1\*05:01 (703) reactivity against cell 74, no other class II DSA were detected against either cell.

For **serum 76**, reactivity to a number of 5C (B76, B49, B50, B57, B58), 7C (B13, B41, B47, B60, B61), and 10C (A33, A34, A68, A69) specificities was reported by  $\geq 90\%$  of labs. Median MFI values ranged from 5348 to 22442. Anti-A1 (5536), -A2 (12114), -B44 (21442), and -B45 (22442) reactivity was also reported with  $\geq 90\%$  consensus.

Good agreement was achieved in the reporting of class I DSA against cell 73 and 74. Against cell 73, anti-A2 (12114), and -B44 (21442) reactivity was reported. In addition, reactivity to B\*40:05 (B50) was reported by 5 labs, with MFI = 13712. Against cell 74, anti-A2 (12114) and -B61 (14076) reactivity was reported. By contrast, the reporting of class II DSA against cell 73 and cell 74 were mixed among labs. Nine labs reported anti-DR4 (1592) reactivity against cell 73 and 7 labs indicated no class II DSA were present. Against cell 74, 8 labs reported anti-DR4 reactivity, while 9 labs reported no class II DSA were present.

#### Cell 73 (Hispanic)

Genotype: A\*02:01-B\*40:05-B\*44:02:01G-C\*05:01-C\*07:02:01G/DRB1\*04:01-DRB1\*14:02-DRB3\*01:01:02G-DQA1\*03:01:01G-DQA1\*05:01:01G-DQB1\*03:01-DPB1\*02:01

#### Cell 74 (Asian)

Genotype: A\*02:07-A\*24:02-B\*15:01-B\*40:06-C\*01:02-C\*08:01/DRB1\*04:06-DRB1\*09:01:02G-DRB4\*01:01:01G-DQA1\*03:01-DQA1\*03:01:01G-DQB1\*03:02-DQB1\*03:03-DPB1\*05:01:01G-DPB1\*13:01:01G

For **serum 77** reactivity to a number of 1C (A1, A23, A24, A36, A80), 5C (B73, B76, B18, B71, B75), 7C (B7, B8, B54, B55, B59, B67), and 10C (A25, A26, A34, A43) specificities was reported with  $\geq 90\%$  consensus. Median MFI values for these antibodies ranged from 5460 to 22242. In addition, labs reported reactivity to B65 (7743), Cw7 (12571), Cw18 (11609), and DQ2 (6960) by a consensus  $\geq 90\%$ .

Class I DSA against cell 73 and 74 were detected in this sample. Against cell 73, anti-Cw7 (12571) reactivity was reported by 13 labs. Additionally, 5 labs reported anti-B\*4005 (B50) (3840) reactivity, and 4 labs reported anti-Bw6 (9399) reactivity. Against cell 74, reactivity to A24 (13709), B61 (4532) and B62 (2943) was reported. In terms of class II DSA, 2 labs reported anti-DQA1\*05:01 (10778) reactivity against cell 73 and 1 lab reported DP13 (1105) reactivity against cell 74. The remainder of the labs indicted no class II DSA were present against either cell.

For **serum 78**, reactivity to 1C (A29, A31, A36, A80), 8C (B8, B18, B65, B65), and 10C (A26, A33, A34, A68, A74) specificities was reported by  $\geq 90\%$  of labs. Median MFI values ranged from 3503 to 12205. Anti-A1 (4782), -A2 (8619), -B51 (3702), and -B57 (3372) reactivity was also reported by a consensus of  $\geq 90\%$ . A number of labs (n=19) reported this sample as negative for class II.

Class I DSA were reported against cell 73 and cell 74. Fourteen labs reported anti-A2 (8619) reactivity against cell 73. The same 14 labs, in addition to 2 others, reported anti-A2 reactivity against cell 74 as well. Weak Cw5 (1781) reactivity was also reported against cell 73 by 6 labs. No class II DSA were reported against either cell.

### Conclusion:

With a few exceptions, agreement among labs in the reporting of class I and class II antibodies was generally above 90% when antibody strength was reported with median MFI values  $> 5000$ . The same was true for the reporting of DSA. When DSA strength was strong (MFI  $> 8000$ ), greater consistency was observed among labs in the reporting of DSA, such as in the case of serum 76 vs. cell 73 and cell 74. By contrast, when DSA strength was weak (MFI  $< 3000$ ), greater variability was observed in its reporting, such as in the case of serum 75 vs. cell 73 and cell 74.

## Part 3

Flow cytometric crossmatch results for cell 73 and cell 74 against sera sample nos. 75 - 78 are summarized in Table 2. Individual results for each

laboratory, along with reported class I and class II DSA for each sera, are listed in tables 4 - 11.

### Flow Cytometric Crossmatch

**Cell 73.** Good agreement ( $\geq 80\%$ ) was achieved overall for the 8 T- and B-cell flow crossmatches against serum samples 75 - 78. Against serum 75, labs reported the T- and B-cell FXM as negative in the presence of weak anti-Cw5 (2654) reactivity. Against **serum 76 - 78**, all 6 crossmatches were reported as positive. Strong class I DSA (MFI > 8000) were present in each case. For **cell 73 vs. serum 76**, no discrepancies were observed for either the T- or B-cell crossmatch. For **cell 74 vs. serum 77 and serum 78**, a few discrepancies were observed, in which some labs reported the T-cell crossmatch as negative, and some reported the B-cell crossmatch as negative or borderline.

**Cell 74.** Good agreement ( $\geq 80\%$ ) was achieved overall for 7 out of 8 flow crossmatches. Among the 7 crossmatches, 1 was reported as negative and 6 were reported as positive. In the case of the positive crossmatches, strong class I DSA (MFI > 8000) were reported in each case. For **cell 74 vs. serum 75**, a few discrepancies were observed among labs, as 19/22 reported the T-cell crossmatch as negative and 15/21 reported the B-cell crossmatch as negative. The remainder of the labs either reported the results as positive or borderline. No class II DSA were reported against cell 74, only weak class I DSA (A24) (2672).

**Table 2. Summary of Flow crossmatch results for Cell #073-#074 vs. Serum #075-#078**

Cell no.	Serum no.	#Labs	T-cell Results	B-cell Results	Cell no.	Serum no.	#Labs	T-cell Results	B-cell Results
73	75	22	NEG(22)	NEG(19) POS(1) NT(2)	74	75	22	NEG(19) Borderline(1) POS(2)	NEG(15) POS(4) Borderline(2) NT(1)
73	76	22	POS(22)	POS(20) NT(2)	74	76	22	POS(22)	POS(20) NT(2)
73	77	22	POS(19) NEG(3)	POS(17) NEG(2) Borderline(1) NT(2)	74	77	22	POS(22)	POS(20) NT(2)
73	78	22	POS(20) NEG(2)	POS(18) Borderline(2) NT(2)	74	78	22	POS(21) NEG(1)	POS(18) NEG(2) NT(2)

agreement <80%

### Conclusion:

In the presence of multiple or strong DSA (MFI > 8000) good agreement was achieved among labs in the reporting of T- and B-cell FXM results. As DSA strength increased (>13000) the number of discrepancies observed generally decreased. However, this was not the case for serum cell 73 vs. serum 77, as 3 labs reported the T-cell crossmatch to be negative despite the presence of strong anti-Cw7 (13709) reactivity. This sug-

gests the sensitivity of the FXM may be more variable at the C-locus. In the case of cell 74 vs. serum 75, the discrepancies observed in the crossmatches may have been due to the presence of weak anti-A24 (2672) reactivity. This was most apparent with respect to the B-cell crossmatch, as class I antigens are more highly expressed on B-cells. This suggests the sensitivity of the FXM may be more variable when DSA strength is weak.

## Part 4

Virtual crossmatch predictions for donor V1 - V4 against sera (patient) samples 77 and 78 are summarized in Table 3 and individual laboratory

predictions are listed in Tables 22 - 29. Fictional donor histories precede each patient-donor summary.

### Virtual Crossmatch Paper Challenge

For the virtual **T-cell crossmatch**, good agreement ( $\geq 80\%$ ) was achieved for 7 out of 8 crossmatch pairs. Among the 7 pairs with good agreement, 5 were predicted to be positive by 100%, in the presence of strong class I DSA (MFI > 12000). For **serum 77 vs. donor V2**, 23 labs predict the T-cell crossmatch to be positive, 1 predicts it to be negative, and 1 predicts borderline results, as anti-B64 (7648) reactivity was reported by labs. For **serum 78 vs. donor V1**, 21 labs predict the T-cell crossmatch to be negative, 2 predict it to be positive, and 2 predict borderline results. Labs predicting the crossmatch to be positive reported weak anti-A11 (2238) and/or anti-B75 (1167) reactivity against donor V1. Lastly, for **serum 78 vs. donor V4**, no agreement was achieved among labs, as 13 labs predict the crossmatch to be positive, 10 predict it to be borderline, and 1 predicts it to be negative. A single weak class I DSA, A29 (4083), was reported against donor V4, which may have played a role in the variability observed in virtual predictions.

For the virtual **B-cell crossmatch**, good agreement ( $\geq 80\%$ ) was achieved for only 3 out of 8 crossmatch pairs. Among the 3 pairs with good agreement, 2 are predicted to be positive, as strong class I and class II DSA were reported (MFI > 6900). For **serum 77 vs. donors V1 and V3**, 18 labs predict the B-cell FXM to be positive, while 7 predict it to be negative, despite the presence of strong class I DSA (MFI > 15000). No class II DSA were reported against either donor. Please note, both class I and class II DSA should be taken into consideration when reporting the expected physical B-cell FXM. For **serum 78 vs. donors V2 and V3**, 18 labs predict the B-cell crossmatch to be positive, while 7 and 8 labs respectively, predict it to be negative. No class II DSA were reported against either donor, only anti-A2 (8619) reactivity. Lastly, for **serum 78 vs. donor V4**, 12 labs predict the B-cell FXM to be positive, 7 labs predict it to be negative, and 5 labs to predict the results to be borderline. Weak anti-A29 (4083) reactivity was reported against the donor in this case.

**Table 3. Summary of Virtual Crossmatch Exchange #013 results (Serum #077-#78 versus Donor V1 - V4)**

Donor no.	Serum no.	#Labs	T-cell Prediction	B-cell Prediction	Predicted Risk Assessment	Donor no.	Serum no.	#Labs	T-cell Prediction	B-cell Prediction	Predicted Risk Assessment
V1	77	25	POS(25)	POS(18) NEG(7)	Unacceptable(25)	V2	77	25	POS(23) NEG(1) Borderline(1)	POS(24) NEG(1)	Unacceptable(24) Acceptable(1)
V1	78	25	NEG(21) POS(2) Borderline(2)	NEG(23) POS(1) Borderline(1)	Acceptable(20) Unacceptable(3) Other(2)	V2	78	25	POS(25)	POS(18) NEG(7)	Unacceptable(25)
V3	77	25	POS(25)	POS(18) NEG(7)	Unacceptable(24) Acceptable(1)	V4	77	25	POS(25)	POS(23) NEG(2)	Unacceptable(25)
V3	78	25	POS(25)	POS(18) NEG(6) Borderline(1)	Unacceptable(25)	V4	78	24	POS(13) Borderline(10) NEG(1)	POS(12) NEG(7) Borderline(5)	Unacceptable(18) Acceptable(1) Other(3) NT (2)

agreement <80%

# DSA Identification

## Patient 1 (Serum 77)

**Patient's fictional case history:** This individual is a 56 year old female being evaluated for her first transplant. The patient has had one prior pregnancy. The patient's HLA type is A\*02:01-A\*33:03-B\*46:01-B\*58:01-C\*01:02-C\*03:02/DRB1\*09:01-DRB1\*13:02-DRB4\*01:01-DRB3\*03:01-DQB1\*03:03-DQB1\*06:09-DPB1\*04:01-DPB1\*105:01. The HLA type of the child is A\*02:01-A\*03:01-B\*46:01-B\*51:01-C\*01:02-C\*15:02/DRB1\*09:01-DRB1\*01:01-DRB4\*01:01-DQB1\*03:03-DQB1\*05:01-DPB1\*04:01.

Multiple class I DSA (A11, A24, B62, B75) were reported against **donor V1**. Respective median MFI values were reported as 15408, 13709, 2943, and 5972. No class II DSA were reported against this donor. All 25 labs predict the expected T-cell FXM to be positive in the presence of strong class I DSA. B-cell predictions, however, were mixed among labs with 18 predicting it to be positive, and 7 predicting it to be negative. The discrepancies observed in the B-cell predictions may be due to interpretation. With respect to B-cell predictions, both class I and class II DSA should be considered when predicting the expected B-cell FXM outcome, as B-cells express both class I and class II antigens. Predicted renal transplant risk was assessed as unacceptable by all labs.

Against **donor V2**, anti-B64 (7658) and -DQ2 (6960) reactivity was reported. Good agreement was achieved in the reporting of virtual T- and B-cell predictions due to the presence of both class I and class II DSA of moderate strength. Only 3 discrepancies were observed for this patient-donor pair, with 1 lab predicting the T- and B-cell FXM to be negative, and 1 lab predicting the T-cell FXM to be borderline. Renal transplant risk assessments were in line with predictions, with all but 1 lab predicting the risk as unacceptable.

Anti-A23 (14048) and anti-Cw7 (12571) reactivity was reported against **donor V3**. No class II DSA were reported. In the presence of strong class I DSA, good agreement was observed in virtual T-cell predictions, as all 25 labs predict the T-cell FXM to be positive. By contrast, no agreement was reached for B-cell predictions; 18 labs predict the B-cell FXM to be positive, and 7 labs predict it to be negative. Once again the discrepancy observed in the reporting of virtual B-cell predictions may be due to labs using different criteria for reporting predictions. For renal transplant risk, 24 labs assessed the predicted risk as unacceptable, and 1 lab assessed the risk as acceptable.

Against **donor V4**, strong class I and class II DSA were reported, as anti-A11 (15408) and anti-DQ2 (6960) reactivity was reported by labs. Consequently, good agreement was achieved for both T- and B-cell predictions, with labs predicting each to be positive. Only 2 discrepancies were observed among predictions, as 2 labs predict the B-cell crossmatch to be negative. No class II DSA were reported by either lab. For predicted renal transplant risk, good agreement was achieved among labs, as all 25 labs assess the risk as unacceptable.

### Virtual Donors – HLA genotype

**Donor 1 (V1):** A\*11:01-A\*24:02-B\*15:02-B\*15:05-C\*03:03-C\*08:01/DRB1\*12:02:01-DRB1\*15:02:01G-DRB3\*03:01:03-DRB5\*01:02-DQA1\*01:03:01-DQA1\*06:01:01-DQB1\*03:01:01-DQB1\*05:03:01-DPB1\*05:01:01-DPB1\*14:01:01.

**Donor 2 (V2):** A\*02:06-A\*32:01-B\*14:01-B\*52:01-C\*04:01:01G-C\*08:02-DRB1\*04:04-DRB1\*07:01-DRB4\*01:01:01G-DQA1\*02:01-DQA1\*03:01:01G-DQB1\*02:02-DQB1\*03:02-DPB1\*03:01-DPB1\*04:02.

**Donor 3 (V3):** A\*02:01:01-A\*23:01:01-B\*44:03:01-B\*49:01:01-C\*04:01:01-C\*07:01:01/DRB1\*08:01-DRB1\*13:02:01-DRB3\*03:01-DQA1\*01:02:01G-DQA1\*04:01-DQB1\*\*04:02:01-DQB1\*06:04:01-DPB1\*02:01:02G-DPB1\*04:02:01G.

**Donor 4 (V4):** A\*11:01-A\*29:02-B\*13:01-B\*44:03-C\*04:06-C\*16:01-DRB1\*07:01-DRB1\*15:02:01G-DRB4\*01:01-DRB5\*01:08N-DQA1\*01:01-DQA1\*02:01-DQB1\*02:02-DQB1\*05:01-DPB1\*01:01-DPB1\*04:01.

## Patient 2 (Serum 78)

**Patient's fictional case history:** This individual is a 32 year old female being evaluated for her first transplant. The patient's HLA type is A\*11:01-A\*24:02-B\*35:01-B\*38:01-C\*04:01-C\*12:03/DRB1\*15:01-DRB1\*13:01-DRB3\*01:01:02G-DRB5\*01:01-DQB1\*06:02-DQB1\*06:03-DPB1\*04:01.

Ten labs reported either weak anti-A11 (A1101) (2238) and/or weak anti-B75 (1167) reactivity **against donor V1**. The remainder of labs (n=15) reported no class I DSA were present. For class II, all but 1 lab, reported no class II DSA were present. Twenty-one labs predict the T-cell FXM for this patient- donor pair to be negative, 2 labs to predict it to be positive, and 2 labs predict borderline results. For virtual B-cell predictions, 23 labs predict the B-cell FXM to be negative, 1 lab predicts it to be positive, and 1 lab predicts borderline results. Predicted renal transplant risk was reported as unacceptable in complete agreement.

Against **donor V2**, multiple class I DSA (A2 , B64) were reported, with respective MFI = 8619 and 6895. No class II DSA were present against this donor. T-cell predictions were reported in complete consensus as positive, as a result of the multiple class I DSA present. No agreement, however, was achieved for B-cell predictions, as 18 labs predict the B-cell FXM to be positive, and 7 predict it to be negative. Similar to what was observed for serum 77, some labs may be determining B-cell predictions solely on class II DSA, and not on class I DSA as well. Predicted renal transplant risk assessments were reported in complete agreement as unacceptable, in line with T-cell predictions.

Strong anti-A2 (8619) reactivity was reported against **donor V3**, while no class II DSA were reported. The presence of strong class I DSA resulted in good agreement among T-cell predictions, as all 25 labs predict the T-cell FXM to be positive. By contrast, no agreement was achieved for B-cell predictions, as 18 labs predict the B-cell FXM to be positive, 6 labs predict it to be negative, and 1 lab predicts borderline results. For predicted renal transplant risk, complete agreement was achieved among labs, as all 25 labs assess the risk as unacceptable.

Against **donor V4**, only weak anti-A29 (4083) reactivity was reported. The presence of this single class I DSA, along with the absence of class II DSA, resulted in the variability observed in the virtual T- and B-cell predictions. For the virtual T-cell crossmatch, 13 labs predict the T-cell FXM to be positive, 10 labs predict it to be borderline, and 1 lab predicts it to be negative. For virtual B-cell predictions, 12 labs predict the B-cell FXM to be positive, 7 labs predict it to be negative, and 5 predict borderline results. For predicted renal transplant risk, 18 labs predict the risk as unacceptable and 1 lab assesses it as acceptable. Additionally, 2 other labs noted communication with clinicians or the program was needed, and another recommended a physical crossmatch was needed to assess risk.

## Conclusion

Overall, good agreement was achieved for T-cell predictions, as 5 of 8 donor-patient pairs are predicted to be positive in complete agreement due to the presence of strong class I DSA (MFI > 8000). Less agreement was observed for B-cell predictions, as only 3 of 8 achieved  $\geq 80\%$  agreement. We would expect agreement among labs to be higher as multiple or strong class I DSA were present in 5 of the patient-donor pairs. However, it seems the variability in the reporting of B-cell predictions may be influenced by different interpretations of what should be reported, a virtual B-cell prediction or the expected physical B-cell crossmatch? For the purpose of this study, labs are instructed to predict the expected physical B-cell crossmatch and take into account both class I and class II DSA when doing so.

Predicted renal transplant risk assessments were generally in line with T-cell predictions. When good agreement was achieved for positive T-cell

predictions, good agreement was also achieved for predicted risk, with labs assessing the risk as unacceptable. However, when variability was observed in the reporting of T-cell predictions, such as with serum 78 against donor V1 and donor V4, variability was also observed in predicted risk assessments.

The reporting of cPRA (calculated panel reactive antibodies) values for serum 77 and serum 78 was consistent across labs overall. For serum 77, all but 2 labs reported cPRA values of > 90%. Multiple class I and class II DSA were detected in this sample. For serum 78, 16 labs reported cPRA values of > 90%, while 4 reported widely variable values, ranging from 11% to 87%. Multiple class I antibodies were detected in this sample by all labs, and all but 2 labs reported it as negative for class II.

**NEXT MAILING DATE: September 12, 2018**

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# Flow Cytometric Crossmatch



Cell #073 HLA Genotype : A\*02:01-B\*40:05-B\*44:02:01G-C\*05:01-C\*07:02:01G-DRB1\*04:01-DRB1\*14:02-DRB3\*01:01:02G-DQA1\*03:01:01G-DQA1\*05:01:01G- DQB1\*03:01-DPB1\*02:01

**Table 4a. Individual Flow crossmatch results and DSA reported for Cell #073 vs. Serum #075**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
206	75	2.98	0.63	1.08		NEGATIVE	no class I DSA	4.94	-1.55	0.92		NEGATIVE	no class II DSA	8.35	20.2	YES
230	75					NEGATIVE						NEGATIVE				YES
774	75	50	-8			NEGATIVE	no class I DSA	120	-14			NEGATIVE	no class II DSA	243	327	NO
792	75	52	9			NEGATIVE	C*05:01(1552)	106	-3			NEGATIVE	no class II DSA	224	292	YES
836	75	70	17			NEGATIVE	C*05:01(3376)	135	10			NEGATIVE	no class II DSA	0	0	NO
1160	75	90	2			NEGATIVE	Cw5(1056)	120	-13			NEGATIVE	no class II DSA	231	191	YES
2400	75	40	0			NEGATIVE	no class I DSA	80	26			NEGATIVE	no class II DSA	185	264	NO
3135	75	1,2	3503	1,1		NEGATIVE						NT		3295		NO
3224	75	70				NEGATIVE	Cw5(3824)	140				NEGATIVE	no class II DSA	250	254	YES
3753	75	50	6			NEGATIVE	no class I DSA	100	0			NEGATIVE	no class II DSA	243	343	NO
3966	75	20	6			NEGATIVE		50	14			NEGATIVE		169	305	NO
4345	75					NEGATIVE						POSITIVE				NO
4661	75	10	0			NEGATIVE	B*40:01(1505)	10	0			NEGATIVE	no class II DSA	234	243	YES
4985	75	40	-40			NEGATIVE	no class I DSA	80	6			NEGATIVE	no class II DSA	227	82	NO
8001	75	50	-13			NEGATIVE	C*05:01(2016)	100	-28			NEGATIVE	no class II DSA	326	381	YES
8035	75	>48	0			NEGATIVE	Cw5(3858)	>90	0			NEGATIVE	no class II DSA	150	213	YES
8050	75	50	0		604	NEGATIVE	Cw5(2749)	120	0		3655	NEGATIVE	no class II DSA	96	279	NO
8083	75	90	48			NEGATIVE	no class I DSA	150	50			NEGATIVE	no class II DSA	327	345	YES
8096	75	25	3.53			NEGATIVE						NT		5.42		NO
8103	75	63	59.4	1.2		NEGATIVE	no class I DSA	846.6	668.5	1.7		NEGATIVE	no class II DSA	63	846.6	NO
8107	75	59	9			NEGATIVE	Cw5(1994)	71	33			NEGATIVE	no class II DSA	246	262	YES
8109	75	2.05		1.41		NEGATIVE	no class I DSA	2.2		1.92		NEGATIVE	no class II DSA			YES

**Table 4b. Individual CDC Crossmatch crossmatch results and DSA reported for Cell #073 vs. Serum #075**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
4079	75					NEGATIVE	Cw5(2650)					NEGATIVE	no class II DSA			YES

**Table 5a. Individual Flow crossmatch results and DSA reported for Cell #073 vs. Serum #076**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
206	76	2.98	459.15	55.99		POSITIVE	A2, B44	4.94	733.3	37.3		POSITIVE	no class II DSA	8.35	20.2	YES
230	76					POSITIVE						POSITIVE				YES
774	76	50	369			POSITIVE	A*02:01(12247), B*40:05(13791), B*44:02(20050)	120	339			POSITIVE	no class II DSA	243	327	NO
792	76	52	397			POSITIVE	B*44:02(17640), A*02:01(11980)	106	332			POSITIVE	DRB1*04:01(1513)	224	292	YES
836	76	70	405			POSITIVE	A*02:01(14479), B*40:05(16112), B44*02(20770)	135	230			POSITIVE	DRB1*04:01(1641)	0	0	NO
1160	76	90	455			POSITIVE	A2(11317), B44(18419), B*40:05(11504)	120	465			POSITIVE	DR4(711)	231	191	YES
2400	76	40	385			POSITIVE	A2(8727), B61(10300)	80	355			POSITIVE	no class II DSA	185	264	NO
3135	76	1,2	15044	4.6		POSITIVE						NT		3295		NO
3224	76	70	419			POSITIVE	A2(18493), B44(19472), B*40:05(B50) (16713)	140	315			POSITIVE	DR4(1952)	250	254	YES
3753	76	50	424			POSITIVE	A2(10922), B44(22161), B50(13712)	100	319			POSITIVE	DR4(1671)	243	343	NO
3966	76	20	427			POSITIVE		50	380			POSITIVE		169	305	NO
4345	76					POSITIVE						POSITIVE				NO
4661	76	10	357			POSITIVE	A*02:01(1180), B*40:01(1292), B*44:02(5398), C*07:02(1001)	10	339			POSITIVE	no class II DSA	234	243	YES
4985	76	40	181			POSITIVE	A2(5300), Cw7(4300)	80	275			POSITIVE	no class II DSA	227	82	NO
8001	76	50	437			POSITIVE	A*02:01(14357), B*44:02(21363)	100	378			POSITIVE	DRB1*04:01(1740)	326	381	YES
8035	76	>48	422			POSITIVE	A2(14062), B44(22380)	>90	408			POSITIVE	DR4(2319)	150	213	YES
8050	76	50	422		58810	POSITIVE	A2(10542), B44(21945)	120	254		68867	POSITIVE	DR4(820)	96	279	NO
8083	76	90	483			POSITIVE	B44(19315)	150	425			POSITIVE	no class II DSA	327	345	YES
8096	76	25	403.26			POSITIVE						NT		5.42		NO
8103	76	63	5480.5	1.2		POSITIVE	A*02:01(3516), B44:02(14037)	846.6	10035.5	1.7		POSITIVE	DRB1*04:01(221)	63	846.6	NO
8107	76	59	476			POSITIVE	A*02:01(15851), B*44:02(19758)	71	473			POSITIVE	DR4(1969)	246	262	YES
8109	76	2.05		175.24		POSITIVE	B44(18342), A2(10666)	2.2		147.78		POSITIVE	no class II DSA			YES

**Table 5b. Individual CDC Crossmatch results and DSA reported for Cell #073 vs. Serum #076**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
4079	76					BORDERLINE	A2(13600)					POSITIVE	no class II DSA			YES

**Table 6a. Individual Flow crossmatch results and DSA reported for Cell #073 vs. Serum #077**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
206	77	2.98	23.85	3.86		POSITIVE	Cw7	4.94	76.7	4.8		POSITIVE	no class II DSA	8.35	20.2	YES
230	77					POSITIVE						POSITIVE				YES
774	77	50	115			POSITIVE	Cw7(10868)	120	119			POSITIVE	no class II DSA	243	327	NO
792	77	52	147			POSITIVE	C*07:02(12688)	106	126			POSITIVE	no class II DSA	224	292	YES
836	77	70	140			POSITIVE	B*40:05(5312), C*07:02(16587)	135	93			BORDERLINE	no class II DSA	0	0	NO
1160	77	90	197			POSITIVE	B*40:05(3536), Cw7(11791)	120	208			POSITIVE	no class II DSA	231	191	YES
2400	77	40	148			POSITIVE	B61(3050), Cw7(12281)	80	157			POSITIVE	no class II DSA	185	264	NO
3135	77	1,2	3059	0,9		NEGATIVE						NT		3295		NO
3224	77	70	96			POSITIVE	Cw7(15735), B50(6832)	140	42			POSITIVE	no class II DSA	250	254	YES
3753	77	50	155			POSITIVE	B50(2117), Bw6(4622), Cw7(9319)	100	135			POSITIVE	no class II DSA	243	343	NO
3966	77	20	132			POSITIVE		50	162			POSITIVE		169	305	NO
4345	77					POSITIVE						POSITIVE				NO
4661	77	10	72			POSITIVE	A*02:01(9856), B*40:01(1214), B*44:02(5083), C*07:02(803)	10	98			POSITIVE	no class II DSA	234	243	YES
4985	77	40	4			NEGATIVE	no class I DSA	80	61			NEGATIVE	no class II DSA	227	82	NO
8001	77	50	141			POSITIVE	C*07:02(14573)	100	219			POSITIVE	DQA1*05:01(8963)	326	381	YES
8035	77	>48	129			POSITIVE	Cw7(13689), Bw6(9460)	>90	131			POSITIVE	DQA1*05:01(12588)	150	213	YES
8050	77	50	143		3121	POSITIVE	Bw6(5000), Cw7(10324)	120	118		16460	NEGATIVE	no class II DSA	96	279	NO
8083	77	90	299			POSITIVE	Cw7(15269)	150	200			POSITIVE	no class II DSA	327	345	YES
8096	77	25	22.4			NEGATIVE						NT		5.42		NO
8103	77	63	142	1.2		POSITIVE	C*07:02(3437)	846.6	1597	1.7		POSITIVE	no class II DSA	63	846.6	NO
8107	77	59	199			POSITIVE	Cw7(16975)	71	173			POSITIVE	no class II DSA	246	262	YES
8109	77	2.05		19.89		POSITIVE	Cw7(13274), Bw6(9399), B50(3884)	2.2		42.67		POSITIVE	no class II DSA			YES

**Table 6b. Individual CDC Crossmatch results and DSA reported for Cell #073 vs. Serum #077**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
4079	77					NEGATIVE	Cw7(12163)					NEGATIVE	no class II DSA			YES

**Table 7a. Individual Flow crossmatch results and DSA reported for Cell #073 vs. Serum #078**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
206	78	2.98	29.05	4.48		POSITIVE	A2	4.94	61.85	4.06		POSITIVE	no class II DSA	8.35	20.2	YES
230	78					POSITIVE						POSITIVE				YES
774	78	50	84			POSITIVE	A*02:01(7196)	120	117			POSITIVE	no class II DSA	243	327	NO
792	78	52	140			POSITIVE	A*02:01(7800), C*05:01(1250)	106	116			POSITIVE	no class II DSA	224	292	YES
836	78	70	133			POSITIVE	A*02:01(9924), C*05:01(1680)	135	92			BORDERLINE	no class II DSA	0	0	NO
1160	78	90	205			POSITIVE	A2(5949)	120	227			POSITIVE	no class II DSA	231	191	YES
2400	78	40	114			POSITIVE	A2(5591)	80	162			POSITIVE	no class II DSA	185	264	NO
3135	78	1,2	3726	1,1		NEGATIVE						NT		3295		NO
3224	78	70	114			POSITIVE	A2(10918), Cw5(1927)	140	36			POSITIVE	no class II DSA	250	254	YES
3753	78	50	148			POSITIVE	A2(11235)	100	191			POSITIVE	no class II DSA	243	343	NO
3966	78	20	141			POSITIVE		50	164			POSITIVE		169	305	NO
4345	78					POSITIVE						POSITIVE				NO
4661	78	10	112			POSITIVE	A*02:01(1116), B*40:01(803), B*44:02(3515)	10	111			POSITIVE	no class II DSA	234	243	YES
4985	78	40	14			NEGATIVE	no class I DSA	80	90			BORDERLINE	A2(7800)	227	82	NO
8001	78	50	171			POSITIVE	A*02:01(9122)	100	223			POSITIVE	no class II DSA	326	381	YES
8035	78	>48	181			POSITIVE	A2(12220), Cw5(2893)	>90	172			POSITIVE	no class II DSA	150	213	YES
8050	78	50	179		4559	POSITIVE	A2(9853), Cw5(1822)	120	138		20316	POSITIVE	no class II DSA	96	279	NO
8083	78	90	264			POSITIVE	A2(8168)	150	196			POSITIVE	no class II DSA	327	345	YES
8096	78	25	36.28			POSITIVE						NT		5.42		NO
8103	78	63	153	1.2		POSITIVE	A*02:01(1551)	846.6	1927.5	1.7		POSITIVE	no class II DSA	63	846.6	NO
8107	78	59	184			POSITIVE	A*02:01(8857), Cw5(1791)	71	175			POSITIVE	no class II DSA	246	262	YES
8109	78	2.05		18.35		POSITIVE	A2(8619)	2.2		22.92		POSITIVE	no class II DSA			YES

**Table 7b. Individual CDC Crossmatch results and DSA reported for Cell #073 vs. Serum #078**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
4079	78					NEGATIVE	A2(6687)					POSITIVE	no class II DSA			YES

Cell #074 HLA Genotype : A\*02:07-A\*24:02-B\*15:01-B\*40:06-C\*01:02-C\*08:01-DRB1\*04:06-DRB1\*09:01:02G-DRB4\*01:01:01G-DQA1\*03:01-DQA1\*03:01:01G- DQB1\*03:02-DQB1\*03:03-

**Table 8a. Individual Flow crossmatch results and DSA reported for Cell #074 vs. Serum #075**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
206	75	2.981	5.69	1.85		NEGATIVE	no class I DSA	4.94	16	1.58		NEGATIVE	no class II DSA	6.71	27.55	YES
230	75					NEGATIVE						NEGATIVE				YES
774	75	50	12			NEGATIVE	no class I DSA	120	38			NEGATIVE	no class II DSA	219	364	NO
792	75	52	33			NEGATIVE	A*24:02(2396), B*40:06(657)	106	26			NEGATIVE	DPB1*05:01(703)	215	328	YES
836	75	70	38			NEGATIVE	A*24:02(3698)	135	35			NEGATIVE	no class II DSA	0	0	NO
1160	75	90	41			NEGATIVE	A24(2024)	120	63			NEGATIVE	no class II DSA	204	212	YES
2400	75	40	14			NEGATIVE	no class I DSA	80	65			NEGATIVE	no class II DSA	179	297	NO
3135	75	1,2	2863	0,9		NEGATIVE						NEGATIVE		3097		NO
3224	75	70				NEGATIVE	A24(4173)	140				NEGATIVE	no class II DSA	250	254	YES
3753	75	50	31			NEGATIVE	A*24:02(1708)	100	32			NEGATIVE	no class II DSA	232	344	NO
3966	75	20	38			POSITIVE		50	66			POSITIVE		157	279	NO
4345	75					POSITIVE						POSITIVE				NO
4661	75	10	0			NEGATIVE	no class I DSA	10	12			POSITIVE	no class II DSA	237	280	YES
4985	75	40	35			NEGATIVE	A24(2660)	80	100			POSITIVE	no class II DSA	225	232	NO
8001	75	50	49			NEGATIVE	A*24:02(2342)	100	38			NEGATIVE	no class II DSA	277	389	YES
8035	75	48	31			NEGATIVE	A24(1996)	90	52			NEGATIVE	no class II DSA	131	194	YES
8050	75	50	47		960	NEGATIVE	no class I DSA	120	0		1479	NEGATIVE	no class II DSA	80	180	YES
8083	75	90	24			NEGATIVE	no class I DSA	150	23			NEGATIVE	no class II DSA	259	250	YES
8096	75	25	9.22			NEGATIVE						NT		11.12		NO
8103	75	57.6	52.5	1.2		NEGATIVE	no class I DSA	2502.4	1403.5	1.7		NEGATIVE	no class II DSA	57.6	2502.4	NO
8107	75	59	37			NEGATIVE	A*24:02(2672)	71	73			BORDERLNE	no class II DSA	247	287	YES
8109	75	2.05		2.72		BORDERLNE	A24(2112)	2.2		4.33		BORDERLNE	no class II DSA			YES

**Table 8b. Individual CDC crossmatch results and DSA reported for Cell #074 vs. Serum #075**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
4079	75					NEGATIVE	A*24:02(3578)					NEGATIVE	no class II DSA			YES

**Table 9a. Individual Flow crossmatch results and DSA reported for Cell #074 vs. Serum #076**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
206	76	2.981	209.29	32.19		POSITIVE	A2, B61	4.94	503.95	19.29		POSITIVE	no class II DSA	6.71	27.55	YES
230	76					POSITIVE						POSITIVE				YES
774	76	50	188			POSITIVE	A2(35154), B*40:06(12948)	120	256			POSITIVE	no class II DSA	219	364	NO
792	76	52	253			POSITIVE	A2(11980), B*40:06(12275), B*15:01(702)	106	187			POSITIVE	DR4(1513)	215	328	YES
836	76	70	254			POSITIVE	A*02:07(13631), B*40:06(14462)	135	222			POSITIVE	no class II DSA	0	0	NO
1160	76	90	367			POSITIVE	A2(11317), B61(11357)	120	442			POSITIVE	DR4(764)	204	212	YES
2400	76	40	258			POSITIVE	A2(7764), B61(10779)	80	266			POSITIVE	no class II DSA	179	297	NO
3135	76	1,2	4845	1,6		POSITIVE						NT		3097		NO
3224	76	70	288			POSITIVE	A2(18493), B61(16104), B62(1309)	140	255			POSITIVE	DR4(1952)	250	254	YES
3753	76	50	278			POSITIVE	A1(10922), B61(13484)	100	283			POSITIVE	DR4(1671)	232	344	NO
3966	76	20	283			POSITIVE		50	357			POSITIVE		157	279	NO
4345	76					POSITIVE						POSITIVE				NO
4661	76	10	229			POSITIVE	A*02:01(1180), A*24:02(1929), B*40:02(1901)	10	266			POSITIVE	no class II DSA	237	280	YES
4985	76	40	260			POSITIVE	A2(5300), A24(4700)	80	315			POSITIVE	no class II DSA	225	232	NO
8001	76	50	367			POSITIVE	A2(14357), B61(17203)	100	298			POSITIVE	DR4(1890)	277	389	YES
8035	76	48	355			POSITIVE	A2, B62(995), B*4006(16823), Cw1(1459)	90	389			POSITIVE	DR4(2319)	131	194	YES
8050	76	50	383		32967	POSITIVE	A2(10542), B61(14076), Cw1(1411)	120	316		46656	POSITIVE	no class II DSA	80	180	YES
8083	76	90	378			POSITIVE	A2(13914), B61(13336)	150	306			POSITIVE	no class II DSA	259	250	YES
8096	76	25	86.39			POSITIVE						NT		11.12		NO
8103	76	57.6	798.5	1.2		POSITIVE	A*02(4883), B5(13055), B40(4883)	2502.4	6093	1.7		POSITIVE	DRB1*04(328)	57.6	2502.4	NO
8107	76	59	293			POSITIVE	A2(15738)	71	378			POSITIVE	DR4(1969)	247	287	YES
8109	76	2.05		68.25		POSITIVE	A2(10666), B61(10550)	2.2		90.62		POSITIVE	no class II DSA			YES

**Table 9b. Individual CDC crossmatch results and DSA reported for Cell #074 vs. Serum #076**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
4079	76					NEGATIVE	A2(13600), B*40:06(14765)					BORDERLINE	DR4(1473)			YES

**Table 10a. Individual Flow crossmatch results and DSA reported for Cell #074 vs. Serum #077**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
206	77	2.981	123.29	19.37		POSITIVE	A24, B61, B62	4.94	452.95	17.44		POSITIVE	no class II DSA	6.71	27.55	YES
230	77					POSITIVE						POSITIVE				YES
774	77	50	202			POSITIVE	A*24:02(11368), B*40:06(4226)	120	240			POSITIVE	no class II DSA	219	364	NO
792	77	52	171			POSITIVE	A*24:02(13709), B*15:01(2647), C*08:01(402)	106	144			POSITIVE	DPB1*13:01(547)	215	328	YES
836	77	70	198			POSITIVE	A*24:02(18345), B*40:06(5008), B*15:01(3558)	135	197			POSITIVE	no class II DSA	0	0	NO
1160	77	90	313			POSITIVE	A24(13133), B62(2756), B61(3941)	120	428			POSITIVE	no class II DSA	204	212	YES
2400	77	40	226			POSITIVE	A24(12794), B62(2049), B61(3062)	80	242			POSITIVE	no class II DSA	179	297	NO
3135	77	1.2	4279	1.4		POSITIVE						NT		3097		NO
3224	77	70	198			POSITIVE	A24(19591), B61(7064), B62(5978)	140	237			POSITIVE	no class II DSA	250	254	YES
3753	77	50	236			POSITIVE	A*24:02(8954), B62(1145), B61(2240), Bw6(4622)	100	258			POSITIVE	no class II DSA	232	344	NO
3966	77	20	263			POSITIVE		50	324			POSITIVE		157	279	NO
4345	77					POSITIVE						POSITIVE				NO
4661	77	10	138			POSITIVE	A*02:01(9856), A*24:02(1807), B*40:02(1558)	10	214			POSITIVE	no class II DSA	237	280	YES
4985	77	40	205			POSITIVE	A24(11000)	80	261			POSITIVE	no class II DSA	225	232	NO
8001	77	50	293			POSITIVE	A*24:02(15498), B*15:01(3099)	100	308			POSITIVE	no class II DSA	277	389	YES
8035	77	48	297			POSITIVE	A*24:02(13795), B61(6483), B62(4808), Cw8(1228), Bw6(9460)	90	374			POSITIVE	DP13(1105)	131	194	YES
8050	77	50	259		8940	POSITIVE	A*24:02(8467), B61(Bw6)(3933), B62(Bw6)(2624)	120	223		17533	POSITIVE	no class II DSA	80	180	YES
8083	77	90	346			POSITIVE	A24(17314)	150	353			POSITIVE	no class II DSA	259	250	YES
8096	77	25	79.66			POSITIVE						NT		11.12		NO
8103	77	57.6	150.5	1.2		POSITIVE	A*24:02(6402)	2502.4	3059.5	1.7		POSITIVE	no class II DSA	57.6	2502.4	NO
8107	77	59	248			POSITIVE	A*24:02(19318), B*15:01(3723)	71	330			POSITIVE	no class II DSA	247	287	YES
8109	77	2.05		30.77		POSITIVE	A24(14901), B61(4492), B62(3139)	2.2		55.88		POSITIVE	no class II DSA			YES

**Table 10b. Individual CDC crossmatch results and DSA reported for Cell #074 vs. Serum #077**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
4079	77					NEGATIVE	B62(3308), B*40:06(4581)					BORDERLINE	no class II DSA			YES

**Table 11a. Individual Flow crossmatch results and DSA reported for Cell #074 vs. Serum #078**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
206	78	2.981	40.89	7.09		POSITIVE	A2	4.94	104.95	4.81		POSITIVE	no class II DSA	6.71	27.55	YES
230	78					POSITIVE						POSITIVE				YES
774	78	50	96			POSITIVE	A2(22075)	120	176			POSITIVE	no class II DSA	219	364	NO
792	78	52	153			POSITIVE	A2(8627)	106	99			NEGATIVE	no class II DSA	215	328	YES
836	78	70	104			POSITIVE	A*02:07(7717)	135	70			NEGATIVE	no class II DSA	0	0	NO
1160	78	90	194			POSITIVE	A2(6294)	120	275			POSITIVE	no class II DSA	204	212	YES
2400	78	40	99			POSITIVE	A2(5792)	80	160			POSITIVE	no class II DSA	179	297	NO
3135	78	1,2	4198	1,4		POSITIVE						NT		3097		NO
3224	78	70	124			POSITIVE	A2(10918)	140	131			POSITIVE	no class II DSA	250	254	YES
3753	78	50	127			POSITIVE	A2(11235)	100	224			POSITIVE	no class II DSA	232	344	NO
3966	78	20	129			POSITIVE		50	224			POSITIVE		157	279	NO
4345	78					POSITIVE						POSITIVE				NO
4661	78	10	103			POSITIVE	A*02:01(1116), A*24:02(1244), B*40:02(885)	10	147			POSITIVE	no class II DSA	237	280	YES
4985	78	40	107			POSITIVE	A2(7800)	80	196			POSITIVE	no class II DSA	225	232	NO
8001	78	50	197			POSITIVE	A2(9977)	100	179			POSITIVE	no class II DSA	277	389	YES
8035	78	48	158			POSITIVE	A2	90	202			POSITIVE	no class II DSA	131	194	YES
8050	78	50	223		8940	POSITIVE	A2(9853)	120	160		17533	POSITIVE	no class II DSA	80	180	YES
8083	78	90	219			POSITIVE	A2(8168)	150	210			POSITIVE	no class II DSA	259	250	YES
8096	78	25	23.96			NEGATIVE						NT		11.12		NO
8103	78	57.6	176.5	1.2		POSITIVE	A*02(1544)	2502.4	3463.5	1.7		POSITIVE	no class II DSA	57.6	2502.4	NO
8107	78	59	165			POSITIVE	A2(9164)	71	215			POSITIVE	no class II DSA	247	287	YES
8109	78	2.05		15.35		POSITIVE	A2(8619)	2.2		23.99		POSITIVE	no class II DSA			YES

**Table 11b. Individual CDC crossmatch results and DSA reported for Cell #074 vs. Serum #078**

Ctr	Serum no	T Cell Pos cutoff	T Cell MCS	RATIO	MESF	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	MESF	B-Cell RESULT	Class II DSA(MFI)	T Cell NEG Control MC	B Cell NEG Control MC	Pronase Treated
206	78					NEGATIVE	A2(6687)					POSITIVE	no class II DSA			YES



# Single Antigen

**Table 12. Summary of Single Antigen results for Serum #075**

Class I							
*** Serum 75 ***							
22 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
A1	22	100%	9968	9330	4337	1820	22631
B41	22	100%	14003	13584	5002	2612	25178
B42	22	100%	13487	13554	5031	2379	25380
B60	22	100%	8880	8565	3639	1505	18619
B7	22	100%	11762	11183	4416	2834	24634
B8	22	100%	22532	21703	5170	8250	28266
B48	21	95%	9932	9941	4129	420	21162
B59	21	95%	6157	5963	2163	748	10187
A36	18	81%	3174	3183	1324	588	5271
B65	18	81%	3160	3069	1022	198	4549
A23	17	77%	2842	2904	1017	395	4581
B76	17	77%	3350	3030	1101	576	4942
B81	17	77%	10569	10833	4504	1322	23433
A80	15	68%	2554	2397	759	232	3414
B64	15	68%	2765	2540	869	203	3676
B37	14	63%	2485	3029	2668	87	12209
A24	13	59%	2672	2765	973	526	4172
B18	13	59%	2048	2010	771	164	3027
Cw17	12	54%	2534	2378	940	397	3599
Cw15	11	50%	2573	2435	1098	189	3797
Cw5	11	50%	2654	2492	1127	224	3858
A32	9	40%	1749	1559	678	98	2357
Cw18	9	40%	2058	1912	712	166	2490
Cw2	8	36%	2050	1946	732	163	2654
Cw6	7	31%	1843	1638	596	244	2137
A74	6	27%	1606	1438	748	55	2237
B8101	6	27%	10763	9110	5287	1634	14313
A29	4	18%	1219	1045	600	63	1680
B39	4	18%	1588	1391	814	100	2291
B61	4	18%	1112	1018	613	75	1773
B2708	3	13%	1044	856	596	51	1475
B3901	3	13%	986	938	666	100	1730
B703	3	13%	3303	2967	551	2190	3408
A33	2	9%	665	665	570	95	1235
B38	2	9%	573	573	477	96	1050
B46	2	9%	663	662	547	116	1209
A1101	1	4%	88	88	-	88	88

Class II							
*** Serum 75 ***							
21 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
DQ5	21	100%	4263	4677	2309	227	9434
DQ6	18	85%	3581	3749	2184	77	8301
DR103	17	80%	2715	2674	1104	661	5279
DR1	16	76%	2276	2248	833	904	4169
DR51	16	76%	2240	2198	753	880	3416
DR15	3	14%	1149	1021	403	477	1439
DQA1*01	2	9%	2892	2891	2665	227	5556
DR16	2	9%	734	734	470	264	1204
DP11	1	4%	90	90	-	90	90
DP13	1	4%	52	52	-	52	52
DP14	1	4%	56	56	-	56	56
DP15	1	4%	84	84	-	84	84
DP17	1	4%	21	21	-	21	21
DP18	1	4%	22	22	-	22	22
DP19	1	4%	134	134	-	134	134
DP28	1	4%	6	6	-	6	6
DP401	1	4%	96	96	-	96	96
DP402	1	4%	2	2	-	2	2
DP9	1	4%	40	40	-	40	40

**Blue** = DSA against cell #073 only

**Gold** = DSA against cell #074 only

**Green** = DSA against cell #073 and #74

**Table 13. Summary of Single Antigen results for Serum #076**

Class I							
*** Serum 76 ***							
22 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
A2	22	100%	12114	12281	5320	1824	25847
A33	22	100%	5354	5292	2507	783	11017
A34	22	100%	8351	7933	4154	1589	21900
A68	22	100%	11063	10187	5103	870	25489
B76	22	100%	21032	19114	5159	5386	27808
A69	21	95%	10278	10006	4969	736	24707
B13	21	95%	13880	13226	5591	717	26792
B41	21	95%	14152	13130	5426	1307	27041
B44	21	95%	21442	20351	4685	5508	28213
B45	21	95%	22442	21425	4803	6397	28618
B47	21	95%	10836	10504	4588	1026	24669
B49	21	95%	13729	12914	5052	1128	25908
B50	21	95%	13712	13088	5102	1679	26705
B57	21	95%	6402	5990	3202	482	15946
B58	21	95%	5348	4993	2452	354	10619
B60	21	95%	14148	13074	5483	1292	27170
B61	21	95%	14076	13341	5430	1781	26722
A1	20	90%	5536	5557	1863	1921	8200
B7	17	77%	2249	2331	837	793	3959
B82	16	72%	19085	17950	4558	6053	27735
B27	15	68%	2354	2260	854	79	3277
A66	12	54%	5300	5122	2085	1384	8058
B81	12	54%	2329	2463	630	1501	3668
B48	11	50%	1993	2003	743	142	2830
A6602	9	40%	5710	5429	3078	523	10261
B2708	8	36%	2495	2261	1200	867	4433
A203	6	27%	5839	7972	5980	1606	17570
B8201	5	22%	19125	18578	2282	14171	20703
A26	4	18%	1602	2910	2629	1028	7410
B73	4	18%	1886	2977	1996	1707	6430
B8101	4	18%	2284	2231	1162	547	3810
A25	3	13%	2288	3041	1968	1098	5738
B62	3	13%	995	862	428	284	1308
B72	3	13%	1058	805	362	294	1064
Cw1	3	13%	1411	987	633	92	1459
A23	2	9%	4380	4379	2479	1901	6858
A24	2	9%	3356	3356	1427	1929	4783

Class II							
*** Serum 76 ***							
22 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
DR4	16	73%	1592	1445	612	328	2384
NEG	6	27%	-	-	-	-	-
DP11	3	14%	1593	1521	209	1237	1735
DPA1*02	2	9%	624	623	614	10	1237
DP13	1	5%	41	41	-	41	41
DP14	1	5%	42	42	-	42	42
DP15	1	5%	23	23	-	23	23
DP17	1	5%	2	2	-	2	2
DP18	1	5%	23	23	-	23	23

Blue = DSA against cell #073 only

Gold = DSA against cell #074 only

Green = DSA against cell #073 and #74

**Table 14. Summary of Single Antigen results for Serum #077**

Class I							
*** Serum 77 ***							
23 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
A1	23	100%	20763	19198	6025	3682	27415
A23	23	100%	14048	13609	5611	1610	26176
A25	23	100%	15910	15371	5809	2065	26359
A26	23	100%	14395	14198	5887	1988	26238
A34	23	100%	16044	15286	5918	3069	26648
A36	23	100%	15240	14648	5813	1797	26460
A80	23	100%	17795	16659	5709	2636	27215
B59	23	100%	9242	8973	3801	850	19526
B73	23	100%	15008	14463	5845	1388	26000
B76	23	100%	14862	14707	5219	2915	26297
B8	23	100%	22242	19794	6176	3498	28007
Cw18	23	100%	11609	10888	5437	688	25100
A43	22	95%	14966	14501	5513	1604	26953
Cw6	22	95%	11894	11894	5094	970	24931
<b>Cw7</b>	22	95%	12571	12623	5423	803	26428
<b>A24</b>	21	91%	13709	13227	5700	1807	25667
B18	21	91%	7120	6872	3237	697	13264
B54	21	91%	8656	8612	4153	760	19536
B55	21	91%	6255	5891	2879	464	10930
B65	21	91%	7743	7479	3633	851	16558
B67	21	91%	7021	6579	3555	373	14768
B7	21	91%	5877	5868	2928	795	12522
B71	21	91%	5460	5161	2171	414	8616
B75	21	91%	5972	5929	2844	307	11993
B35	20	86%	4277	3999	1720	274	7073
B42	20	86%	8129	8043	3967	392	17279
B64	20	86%	7658	7612	3382	1006	15368
B56	19	82%	5155	5045	2385	413	9720
<b>B61</b>	19	82%	4532	4459	1798	808	8119
<b>B62</b>	19	82%	2943	2967	1293	291	5978
B78	19	82%	5667	5572	2194	575	9082
A11	18	78%	15408	15195	5184	3003	26512
B41	18	78%	4643	4681	1843	1179	8348
B45	18	78%	4005	3997	1348	1228	6689
<b>B50</b>	18	78%	3840	3739	1364	1118	6830
B60	18	78%	4183	4198	1408	1214	6680
Cw4	16	69%	3388	3215	1151	189	4964

Class II							
*** Serum 77 ***							
22 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
DQ2	22	100%	6960	6661	2996	1255	13168
DP19	11	50%	1971	1822	679	33	2849
<b>DQA1*05</b>	4	18%	8100	7204	4806	28	12588
DQ5	3	13%	1080	905	560	149	1486
DR16	2	13%	1657	1657	474	1183	2131
DR7	3	13%	1049	820	479	154	1258
<b>DP13</b>	2	9%	560	559	546	14	1105
DPA1*01	2	9%	1008	1008	981	27	1989
DQ6	2	9%	941	941	762	179	1703
DQA1*01	2	9%	615	614	466	149	1080
DQA1*02	2	9%	2815	2814	2807	8	5621
DQA1*03	2	9%	3732	3732	3719	13	7451
DQA1*04	2	9%	3513	3512	3453	60	6965
DR52	2	9%	709	708	666	43	1374
DR8	2	9%	526	526	509	17	1035
DP11	1	4%	15	15	-	15	15
DP14	1	4%	20	20	-	20	20
DP15	1	4%	14	14	-	14	14
DP17	1	4%	49	49	-	49	49
DP18	1	4%	38	38	-	38	38
DP28	1	4%	56	56	-	56	56
DP401	1	4%	13	13	-	13	13
DP402	1	4%	3	3	-	3	3

**Blue** = DSA against cell #073 only  
**Gold** = DSA against cell #074 only  
**Green** = DSA against cell #073 and #74

**Table 15. Summary of Single Antigen results for Serum #078**

Class I							
*** Serum 78 ***							
23 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
A2	23	100%	8619	8355	4525	1018	22356
A33	23	100%	7342	7040	3688	902	17744
B18	23	100%	6860	6994	3606	932	16964
B64	23	100%	6895	6759	3435	1101	16901
B65	23	100%	6937	6883	3577	954	16844
B8	23	100%	12205	11845	5376	1625	26139
A1	22	95%	4782	4661	1750	766	8204
A26	22	95%	4292	4394	1992	926	8485
A34	22	95%	5012	4739	1971	915	8335
A68	22	95%	5343	5036	2130	767	8614
A80	22	95%	3911	3914	1506	859	7247
A29	21	91%	4083	4101	1711	131	6741
A31	21	91%	4618	4785	2255	268	10358
A36	21	91%	3503	3444	1046	835	5228
A74	21	91%	4935	5213	2603	236	12228
B51	21	91%	3702	3484	1461	345	5592
B57	21	91%	3372	3253	1338	359	5564
A3	20	86%	3901	3999	1682	240	6676
B58	20	86%	3174	3162	1225	311	5553
A43	19	82%	3462	3719	1362	1078	7023
B59	19	82%	3000	3030	839	680	4282
A69	18	78%	3244	2907	1108	460	4640
A66	17	73%	4461	4795	1917	1037	9008
B73	16	69%	2709	2578	800	915	3954
B38	15	65%	2574	2482	889	121	3923
B39	15	65%	2764	2770	895	767	4559
B54	15	65%	2123	2062	838	518	3601
B78	14	60%	2619	2527	864	590	3892
Cw5	6	26%	1781	1614	833	153	2893
A11	5	21%	1890	1820	368	1169	2306
A203	5	21%	7323	6949	4588	1396	12912
A6601	5	21%	3244	3354	2065	834	6040
A6602	5	21%	3524	3453	2436	435	6628
B71	5	21%	979	889	527	268	1565
A1101	4	17%	2585	2495	738	1487	3326
B75	4	17%	1167	1086	566	244	1768
B46	3	13%	548	723	576	122	1499

Class II							
*** Serum 78 ***							
22 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
NEG	19	86%	-	-	-	-	-
DP11	3	14%	1116	829	586	12	1359
DPA1*02	2	9%	573	573	543	30	1116
DP13	1	5%	65	65	-	65	65
DP14	1	5%	42	42	-	42	42
DP15	1	5%	49	49	-	49	49
DP17	1	5%	64	64	-	64	64
DP18	1	5%	48	48	-	48	48
DP19	1	5%	47	47	-	47	47
DP28	1	5%	38	38	-	38	38
DP401	1	5%	16	16	-	16	16
DP402	1	5%	36	36	-	36	36
DP9	1	5%	41	41	-	41	41

Blue = DSA against cell #073 only

Gold = DSA against cell #074 only

Green = DSA against cell #073 and #74

**Table 16. Individual laboratory results for Serum #075 - class I by Luminex**

**** Serum 75 ****																											
Center	A1	B41	B42	B60	B7	B8	B48	B59	A36	B65	A23	B76	B81	B8101	A80	B64	B37	A24	B18	Cw17	Cw15	Cw5	A32	Cw18	Other	Manufacturer	
54	10504	15580	15884	9633	12538	22681	11237	9279	3620	3366	3349	3177	11768		2609	2771	2621	3088	2373	2529	2573	2609	1634	2010	Cw6,A74>	One Lambda	
206	22631	25178	25380	18619	24634	28266	21162	10187	5271		3595	4027	23433													One Lambda	
230	11932	18342	18235	11615	14011	25928	13275	8085	4303	4434	4073	3492	13773		2643	3486	3385	3925	2816				2102			One Lambda	
774	8348	12914	13295	8054	10989	23236	9443	5311	2325	2633		3092	10569		2000	2033										One Lambda	
792	8180	13412	13216	7964	10161	20799	9131	5988	2670	3089	2570	2251	10152		2115	2477	2243	2396	1935	1537	1502	1522				One Lambda	
836	11984	18111	17983	11519	13959	25641	12866	7211	4417	3684	3953	3888		13731	2970	3055	2706	3698	2563	3135	3224	3376	1749	2437	Cw6,B61>	One Lambda	
1160	6309	12440	11995	7473	9011	22183	8364	4511	1820	2081	2184	1595	8899		1430	1554	1685	2024	1240	1146	1089	1056				One Lambda	
2400	7361	12840	12657	7076	9119	23848	8631	5238		2294			9526													One Lambda	
3224	12796	15953	17003	10797	14684	20992	12746	6828	5094	4549	4581	3456		14313	3206	3676	2549	4172	3027	3238	3797	3824	2357	2490	Cw6,B61>	One Lambda	
3753	10719	16745	16263	9434	12497	24768	10975	7336	2860	3359	2014	3350	12147		2554	2767	2363		1760							One Lambda	
4079	10445	13699	13270	8507	11315	18453	10032	6489	3540	3690	3259	3481	10276		2888	2765	2468	3578	2271	2538	2738	2654	1820	2058	Cw6,B39>	One Lambda	
4661	1820	2612	2379	1505	2834	8250	420	748	588	198	395	576		1634	232	203	87	526	164	397	189	224	98	166	Cw4,Cw6>	Lifecodes	
4985	9136	14306	13463	8170	9340	22383	9876	6157		3231	3002		10018													One Lambda	
8001	10199	15566	14608	9253	12366	23759	9577	6040	3078	2452	2774	2973	12196		2322	1970	2106	2342	1831	2161	1937	2016	1019	1306	B39	One Lambda	
8029	2172	3369	4480	2126	4916	13599			799			882	1322													B703	Lifecodes
8035	12254	14900	15834	11270	14264	26882	12541	6916	4006	4016	2842	4942	14085		3414	3326	2502	1996	2048	3599	3697	3858	1056	2461	Cw6,B61>	One Lambda	
8050	9737	13113	13511	9303	12384	27980	9932	5835	2311	2776	1490	3459	11811		2277	2223	1854		1207	2644	2565	2749		1920	Cw6,Cw2	One Lambda	
8079	6832	11073	11123	6263	8379	18637	6711	4186						7794												B8101	One Lambda
8083	12321	16892	17008	11513	14152	27189	12548	6871	4922	4314	4121	4013		14124	2994	3502	3640	3426	2897	3553	3483	3527	2203	2367	A74,Cw2	One Lambda	
8096																											One Lambda
8103	2046	3886	3441	2327	3570	10919	1290	1254					3064	3064												B40,B703	Lifecodes
8107	10379	15982	16194	10017	12209	22306	10655	6477	3269	2921	2781	2858	11901		2307	2301	12209	2672		2069						One Lambda	
8109	7170	11942	10969	6008	8709	18775	7367	4291	2405	2158	2392		9222					2112								One Lambda	
<b>Avg</b>	9331	13584	13554	8566	11184	21703	9942	5964	3183	3069	2904	3030	10833	9110	2397	2541	3030	2766	2010	2379	2436	2492	1560	1913			
<b>Std Dev.S</b>	4439	5119	5149	3725	4520	5292	4231	2216	1363	1051	1048	1135	4643	5792	785	899	2768	1012	802	981	1152	1182	719	755			
<b>MFI</b>																											
<b>%CV</b>	48%	38%	38%	43%	40%	24%	43%	37%	43%	34%	36%	37%	43%	64%	33%	35%	91%	37%	40%	41%	47%	47%	46%	39%			

Blue = DSA against cell #073 only  
 Gold = DSA against cell #074 only  
 Green = DSA against cell #073 and #74

**Table 17. Individual laboratory results for Serum #076 - class I by Luminex**

**** Serum 76 ****																										
Center	A2	A33	A34	A68	B76	A69	B13	B41	B44	B45	B47	B49	B50	B57	B58	B60	B61	A1	B7	B82	B8201	B27	A66	B81	Other	Manufacturer
54	15496	6964	9743	12855	21582	12310	16273	15451	22217	22442	12078	15204	15056	7101	5996	15885	15996	6851	2686	20110		2387	8058	2808	B48,B2708	One Lambda
206	25847	11017	21900	25489	27808	24707	26792	27041	28213	28618	24669	25908	26705	15946	10619	27170	26722	8200	3403	27735				3668		One Lambda
230	15081	7365	9613	12725	22818	12681	16904	16473	24185	25367	13233	16132	15686	7227	5882	15994	16100	7492	2555	20678		2354		2432	B2708	One Lambda
774	12247	5268	8852	11461	21212	10278	13880	13966	22526	22860	10127	13452	13791	6411	5202	13466	13978	2657	2140	19069			5687	2072	B2708	One Lambda
792	11980	5408	6979	9566	19399	9269	13354	12967	20678	21910	10274	12889	12851	5433	4696	12864	13757	5792	1988	17237		2346	5926	1980	B48	One Lambda
836	20718	6055	8974	11721	22737	11363	15910	15133	24396	24987	11840	15255	15333	6717	5695	15030	16482	6174	2122		20703	2352			A203,B48>	One Lambda
1160	11317	5300	6637	8539	20038	8675	12325	11723	21442	22438	9359	11354	11504	4769	3708	11552	12210	5279	1748	17811		2010		1701	B48,A6602	One Lambda
2400	8333	2852	3811	7143	21053	6712	10671	10614	20921	23085	8778	10463	10454	3788	3380	11155	10436	4502		18378			3536			One Lambda
3224	18493	9834	13223	15837	19524	14916	17233	16984	21304	21828	12936	16805	16712	9343	8451	16564	17487	8146	3959		19125	3277			A203,B48,B62>	One Lambda
3753	10922	3696	5939	9059	21888	9184	13593	13564	22161	23866	10836	13280	13712	4573	4220	14556	13484	3959	1441	19749		1501		1501	A6602	One Lambda
4079	13589	6522	9120	12166	20004	11136	14126	14890	19130	19846	11416	13729	14009	7738	7148	14628	14765	7416	3278	19101		3111	4749	3019	B48	One Lambda
4661	1824	783	3026	870	7079	736	717	1307	5508	6397	1026	1128	1679	482	354	1292	1901	4174	824	6053		79			Cw6,C403>	Lifecodes
4985	5391	4889	6470	3596	5386													8156							Cw6,A24>	One Lambda
8001	14357	6034	8874	12267	21838	11862	16119	15673	23398	23772	12395	15429	15672	6419	5348	15842	17203	4449	2249		19828	2600	5941	2226	B48,B8201	One Lambda
8029	5441	1602	2377	3443	12239	2178	2045	2502	12669	13308	2110	4199	4188	1377	898	1594	1781			12224			1827		A203,B2708	Lifecodes
8035	14062	6375	10011	13242	21890	12733	16990	16909	22380	24334	12851	16241	17078	8240	7639	16647	16823	4782	3040	20330		3167		3030	B48,B62>	One Lambda
8050	10542	4229	7850	10665	22394	9560	13744	14165	21945	25379	10444	13913	13648	6154	5351	14017	14076	1921	2045	19297		2056	4086	2020	B48,Cw1	One Lambda
8079	8850	2688	4700	7050	16433	6799	10476	9972	16500	17912	7751	9843	10121	3700	3069	10289	10958	3399			14171				A203,A6602>	One Lambda
8083	13914	6703	8908	11871	21336	11457	14710	14152	22998	23484	11062	13769	13709	6402	5433	14148	14437	6368	2353		19065	2750	7337		B8101	One Lambda
8096																										One Lambda
8103	5391	1212	1589	2836	13055	2461	3805	4451	14461	14328	4888	4888	4847	1322	1036	4426	4883		793	12283		877	1384		A203,B40>	Lifecodes
8107	15738	7273	10160	13554	21010	13766	16629	16631	20770	22013	13304	16151	16277	7973	7008	16264	16144	7319	3017	19877		3035		3105	B48,A6602	One Lambda
8109	10666	4375	5782	8159	19790	7344	11463	11182	19578	21771	9208	11163	11816	4694	3731	11184	10550	4108		17270			4912			One Lambda
<b>Avg</b>	12282	5293	7934	10187	19114	10006	13227	13131	20351	21426	10504	12914	13088	5991	4994	13075	13342	5557	2332	17950	18578	2260	5122	2464		
<b>Std Dev.S</b>	5446	2566	4252	5223	5281	5092	5729	5560	4801	4922	4701	5177	5228	3281	2513	5618	5564	1911	862	4708	2551	883	2178	658		
<b>MFI</b>																										
<b>%CV</b>	44%	48%	54%	51%	28%	51%	43%	42%	24%	23%	45%	40%	40%	55%	50%	43%	42%	34%	37%	26%	14%	39%	43%	27%		

Blue = DSA against cell #073 only  
 Gold = DSA against cell #074 only  
 Green = DSA against cell #073 and #74

**Table 18. Individual laboratory results for Serum #077 - class I by Luminex**

**** Serum 77 ****																											
Center	A1	A23	A25	A26	A34	A36	A80	B59	B73	B76	B8	Cw18	A43	Cw6	Cw7	A24	B18	B54	B55	B65	B67	B7	B71	B75	B35	B42	
54	22255	18265	20224	18909	20382	19245	20329	10181	18776	18349	22711	14353	18176	14923	16035	18667	8911	10821	7061	9440	8692	7672	6312	7303	4874	9837	
206	27415	26176	26359	26238	26648	26460	27215	19526	26000	26297	28007	25100	26953	24931	26428	25667	13264	19536	10689	16558	14768	12522	8001	11993	5336	17279	
230	24834	18251	19964	19151	22188	20830	20967	11542	19604	18533	25186	15754	19593	16439	17467												
774	20955	13459	16319	13601	16046	13837	18570	9924	15008	18511	22518	9396	13255	9689	10868	11368	7568	9851	6799	8635	7918	6736	6392	7175	4812	8778	
792	20523	14154	15535	14395	15728	15447	16791	8779	15215	13670	19731	11995	14532	11965	12688	13709	7120	8488	5644	7623	6326	5724	5030	5972	3966	7842	
836	24935	18470	20427	23217	20521	19473	20814	10597	19028	18595	24684	14889	18722	15565	18849	18345	9191	10632	10930	9410	8721	7737	7063	7903	7073	12307	
1160	20763	13258	15910	14966	16044	15240	17795	8048	14757	13037	20274	11691	14885	11822	11791	13133	6604	7997	5545	6811	6470	5657	5027	5730	4231	7459	
2400	20795	12932	14639	12972	13480	14750	17365	8923	14190	13301	22368	10133	13622	11366	12453	12939	6024	7968	4528	6715	5419	4506	4337	5474	3291	6794	
3224	22497	19679	20969	19034	21146	20092	21405	10988	20147	19365	22242	16686	19372	16620	15735	19590	11464	13384	9949	11830	11143	10951	8616	9461	5936	12924	
3753	18666	9568	10984	9742	10194	10707	14194	10779	10972	12594	22795	6610	9237	7449	9319		4936	6917	4098	6599	3852	3380	3949	5149	2920	5100	
4079	18764	14048	15790	13474	14089	14946	16512	8526	14143	14411	18620	11609	15047	11614	12163	13960	7344	8656	6258	7743	7546	6403	5559	5653	4034	8416	
4661	3682	1610	2065	1988	3069	1797	2636	850	1752	7271	3498	688	1604	970	803	1807	697	760	464	851	373	795	414	307	274	392	
4985	18328	11667	11674	10484	11375	12121	14547	8384	11510	10178	20100	7541	10401	9609	10456	11311	5645	6828	3586	5811	4265	3409	3881	4857	2963	5693	
8001	22923	15360	19395	18229	19913	18757	20154	10229	17922	16168	22474	14317	18211	14855	14573	15498	7725	10072	6825	8806	7663	6802	6002	7138	4591	8940	
8029	11440	5739	9115	7531	9320	7435	9203	2180	6910	8272	11238	2665	5861	4002	3173	6941	1630	3196	1984	1858	1913	2160	1890	988	1143	1774	
8035	23836	16434	18146	16533	17679	16275	20383	12663	18467	20832	25308	11357	16124	12146	13689	13795	10881	12857	9279	11371	10581	8983	8385	9156	6333	11180	
8050	18986	10194	13946	11793	13171	11485	17024	9848	14027	15536	23167	8202	11458	8444	10324	8467	6969	9127	6255	7769	7021	5877	5460	6451	4322	7821	
8079	18049	12521	15008	13095	13700	13999	15547	7873	13945	12552	19125	10250	14169	10540	11686	12114	5823	7225	5111	6621	5570	5053	4471	4953	3210	6881	
8083	24013	17235	19406	17646	19673	18328	20216	9242	17734	17540	23205	13538	17593	14157	15269	17314	8286	9730	6445	8639	7943	6942	5920	7183	4427	9303	
8096	4154	3022	2710	2334	3238	2438	3906	3533	1388	2915	5544	2586				2345	2770	2630	2842	2279	1082	2579	3150	2316			
8103	10710	6359	7044	6279	6167	6805	8152	3216	5552	6201	9377	2752	5192	3941	3437	6402	1438	2203	1105	1645	1080	1326	1315	1195	926	1170	
8107	22377	19100	20543	19056	19682	19782	21203	11878	18805	19283	21809	15426	18951	17433	17244	19507	10024	11984	8334	10047	9829	8020	7227	8169	5320	10982	
8109	20674	15510	17362	15896	18125	16670	18240	8679	16814	14862	21291	12896	16079	13208	13274	14901											
<b>Avg</b>	19199	13609	15371	14198	15286	14649	16659	8973	14464	14708	19794	10888	14502	11895	12624	13228	6872	8612	5892	7479	6580	5868	5162	5930	3999	8044	
<b>Std Dev.S</b>	6161	5737	5939	6019	6051	5944	5838	3887	5977	5336	6315	5560	5642	5213	5551	5841	3317	4256	2950	3723	3643	3000	2225	2914	1764	4070	
<b>MFI</b>																											
<b>%CV</b>	32%	42%	39%	42%	40%	41%	35%	43%	41%	36%	32%	51%	39%	44%	44%	44%	48%	49%	50%	50%	55%	51%	43%	49%	44%	51%	

Blue = DSA against cell #073 only  
 Gold = DSA against cell #074 only  
 Green = DSA against cell #073 and #74



**Table 18. Individual laboratory results for Serum #077 - class I by Luminex**

**** Serum 77 - cont. ****																							
Center	B64	B56	B61	B62	B78	A11	A1101	A1102	B41	B45	B50	B60	B38	B39	B48	B51	B72	B81	B82	Cw4	Bw6	Other	Manufacturer
54	9158	6278	5416	3664	6594	19367			5534	4350	4277	5021	3225	8281	4196	3104	3716	6966	4978			A66,B53,B77,B37 >	One Lambda
206	15368	8256	6603	3534	8303	26512			7130	4908	4350	6033	3247	13810	4738		3579	12110	5717			A66	One Lambda
230						20485															10500	A66,B77	One Lambda
774	8596	5674	4532	2943	6466	14099			4833	4052	3753	4045	3011	7642	3384	3610	3134	6002	4463			A66,B27,B77,B37	One Lambda
792	7551	4783	4166	2647	5654	15313			4453	3420	3318	3752	2805	6415	3281	2861	2747	5194	3816	3983		A66,B27,B77,B37 >	One Lambda
836	9536	6500	6232	4197	6930		19403	19180	5475	4689	4538	4884	3661	9595	4990	3324	3778			4143		Cw403,B53,A33,B77 >	One Lambda
1160	7017	4678	3986	2756	5421	15503			4230	3659	3536	3836	2252	6061	3348	2744	2833	5099	3804	3465		B53,B77,B37,Cw17 >	One Lambda
2400	6373	3580	3184	2135	4682	13610			3166	2136	2613	2797	2285	4700	2545	2590		4613	2956	3221		A66,B27,B37	One Lambda
3224	12213	9720	8119	5978	9082		20198	20222	8348	6689	6830	6680	3971	11100	5976	3367	5798			4720		B53,A33,A3,B77 >	One Lambda
3753	5807	2940	2240	1145	4187	9711			2609	1994	2117	2447	2307	4528	2137	2616	1460	3151	2322	2465	4622	B53,B77,B37>	One Lambda
4079	7223	5155	4581	3308	5575	14933			4422	3979	4217	4571	3042	6956	3703	2936	3108	5608	4339	3699		B27,B77,B37,Cw17 >	One Lambda
4661	1006	413	1558	291	575		2234	1053	1212	5064	1586	1214	144		122	191	259	470	5221	189		Cw403,A203,A2,B49 >	Lifecodes
4985	5332		3007		4881	11778								4225				3430		3310		A66,B27	One Lambda
8001	8541	5584	4937	3099	5667	18306			5086	3834	3930	4320	2641	7352	3982	2984	3291	6195	4360	2296	22474	A66,B27,B53,B77 >	One Lambda
8029	2297	1510		955	2183		9962	7626		1228	1118						766		1216			A66,B703,B2708,A1101 >	Lifecodes
8035	11655	8189	6483	4808	8400	16459			6909	6189	5850	6296	4655	10148	5635	4719	5130	8307	6677	3906	9460	B52,B53,A33,B77 >	One Lambda
8050	7765	4938	3933	2624	5844	12064			4255	3674	3460	3722	2612	6642	3304	3068	2747	5215	4103	2292	5000	A66,B27,B53,B77 >	One Lambda
8079	6564	4164	3729	2261			13979	13824	3899	2947	2917	3189			2877	2237	2380			2031		B8101,B2708,B7801,A1101 >	One Lambda
8083	8182	5730	4941	3252	6230	18415			5106	4031	3927	4474	3075	7386	3965	2870	3256			3999		A66,B27,B37,B8101 >	One Lambda
8096				2913		3003			1179			2595	2500					2586	3434	2760		A2,B15,A66,B49 >	One Lambda
8103	1892	975	808		1607	7332	7332	4624						1423				1000	918			B40,B15,A66,B27 >	Lifecodes
8107	10172	6804	6273	3866	7589	19596			6423	5119	4970	5701	3532	8722	4967	3505	4001	7837	5742	4964	8485	A66,B27,B77,B37 >	One Lambda
8109						17025										3176					9399	A66	One Lambda
<b>Avg</b>	7612	5046	4459	2967	5572	15195	12185	11088	4682	3998	3739	4199	2880	7352	3715	2935	3058	5236	4004	3215	9991		
<b>Std Dev.S</b>	3469	2450	1848	1329	2254	5334	7029	7885	1897	1387	1404	1448	954	2900	1403	891	1377	2873	1584	1189	5954		
<b>MFI</b>																							
<b>%CV</b>	46%	49%	41%	45%	40%	35%	58%	71%	41%	35%	38%	34%	33%	39%	38%	30%	45%	55%	40%	37%	60%		

Blue = DSA against cell #073 only  
 Gold = DSA against cell #074 only  
 Green = DSA against cell #073 and #74

**Table 19. Individual laboratory results for Serum #078 - class I by Luminex**

Center	**** Serum 78 ****																							Manufacturer	
	A2	A33	B18	B64	B65	B8	A1	A26	A34	A68	A80	A29	A31	A36	A74	B51	B57	A3	B58	A43	B59	A69	A66		Other
<b>54</b>	10180	8325	8496	7593	7888	14135	5196	4746	5534	6227	4503	4379	5357	3745	5533	4163	4027	4552	3702	3759	3534	3528	5258	A11,B78,B54,B39 >	One Lambda
<b>206</b>	22356	17744	16964	16901	16844	26139	8204	8485	7322	8557	7247	6741	10358	3655	12228	5592	4113	6157	3643	7023		3152	9008		One Lambda
<b>230</b>	13168	11796	9903	9535	10789	18087	7103	7607	7709	8614	5910	6340	7304	5073	8826	4921	4849	6083	3823	5306	3951	4640	7990	A11,B78,B54,B39 >	One Lambda
<b>774</b>	7635	6386	6455	6045	5939	11564	4133	3463	4076	4416	2884	5911	3799	3712	4160	3003	2942	3128	2441	2604	2370		3678		One Lambda
<b>792</b>	8627	7339	6860	6895	6937	12205	4891	4187	5313	5628	3961	3821	4618	3503	4935	3765	3208	3980	2891	3364	3304	3086	4701	A11,B78,B54,B39 >	One Lambda
<b>836</b>	9924	8779	8633	8037	8601	14552	5761	7166	6107	6486	4582	4694	5721	3983	6008	4411	4375	5323	3940	4031	3625	3510		A203,B54,B39,B38 >	One Lambda
<b>1160</b>	6294	5377	5507	5024	5140	10739	3599	2825	3905	4040	2727	2491	2599	2542	2691	2738	2554	2150	2321	1958	2358	2267	2801	B78,B54,B39,B38 >	One Lambda
<b>2400</b>	5708	4721	5026	5241	5326	11101	3851	2699	2996	3428	2779	2505	2577	2592	2647	2549	2798		2181		2526		2681		One Lambda
<b>3224</b>	11647	10031	10945	10476	10307	14713	6088	6001	8335	7451	5520	6260	7092	4898	8075	5435	5564	6206	5553	4742	3745	4010		A203,B75,B54,B39 >	One Lambda
<b>3753</b>	11235	8876	9077	8673	8876	15876	6324	5661	5977	6379	4964	5247	6225	4495	6670		3790	5320	3726	4818	3771	3336	6124	A11,B78,B54,B39 >	One Lambda
<b>4079</b>	6687	5290	5846	5589	5571	10232	3967	3141	3742	4006	3006	2944	3485	2934	3759	2959	2524	3155	2579	2581	2414	1765	3361	B78,B54,B39,B38 >	One Lambda
<b>4661</b>	1521	902	932	1184	954	2678	2291	1427	1426	844	1793	131	268	1427	236	345	359	240	311	1078	680	460		Cw4,Cw6,Cw403,A24 >	Lifecodes
<b>4985</b>	7808	6526	5786	5971	6066	12238	4634	4190	4580	5404	3560	3364	4187	3466	4299	2975		3719		2991	3000	3486	4427		One Lambda
<b>8001</b>	9977	8922	8230	7947	7763	12647	4993	5090	5136	5789	4429	4836	5834	3594	5870	3935	3451	4867	3218	4242	2671	2253	5254	B78,B54,B39,B38 >	One Lambda
<b>8029</b>	1824	1638	1430	1656	1328	3369	766	954	976	1300	859			835			754	827						A203,A6601,A6602	Lifecodes
<b>8035</b>	12220	9958	10580	9609	10382	15065	6464	6885	7088	7339	6033	6352	7791	5228	7989	5561	5283	6676	5427	5823	4282	4465	7225	B78,B75,B54,B39 >	One Lambda
<b>8050</b>	9853	7555	9260	8683	8765	15056	5159	4730	4377	4326	4571	4361	5571	3120	6223	4588	3906	3822	3919	3643	3905	1525	4443	B78,B54,B39,B38 >	One Lambda
<b>8079</b>	7000	6395	5762	5483	5925	9979	3864	3568	3500	3800	3232	3100	3854	2820	4072	2857	2500	3408	2302	2875	2083			A203,A6601,A6602	One Lambda
<b>8083</b>	8168	7855	7053	6923	7065	11966	4673	3932	5120	5312	3750	3611	4127	3424	4257	3702	3116	2896	3130	2937	2773	3571	4436	B78,B39,B38,B73	One Lambda
<b>8096</b>	1018	1086	1203	1101	1104	1625	820	926	915	767	1507	934	867		1273	927	956		1031			1163	1037	Cw4,Cw403,B78,B62 >	One Lambda
<b>8103</b>	1551	1505	1490	1643	1351	2414										761								B14	Lifecodes
<b>8107</b>	9164	7578	9037	8474	8829	14190	5112	4597	4904	5321	4449	4036	4247	3907	4758	4440	3886	3487	4005	3462	3599	3581	4461	B78,B54,B39,B38 >	One Lambda
<b>8109</b>	8619	7342	6390	6788	6580	11875	4664	4394	5234	5365	3861	4083	4622	3385	4975	3543	3372	3995	3105	3441	2984	2541	4640	A11,B78,B54,B39 >	One Lambda
<b>Avg</b>	8356	7040	6994	6760	6884	11845	4662	4394	4740	5036	3915	4102	4786	3445	5214	3484	3254	4000	3162	3720	3030	2908	4796		
<b>Std Dev.S</b>	4627	3771	3687	3512	3657	5497	1792	2039	2018	2180	1541	1753	2311	1072	2668	1497	1371	1726	1257	1399	862	1141	1976		
<b>MFI</b>																									
<b>%CV</b>	55%	54%	53%	52%	53%	46%	38%	46%	43%	43%	39%	43%	48%	31%	51%	43%	42%	43%	40%	38%	28%	39%	41%		

Blue = DSA against cell #073 only  
 Gold = DSA against cell #074 only  
 Green = DSA against cell #073 and #74

**Table 20. Individual laboratory results for Serum #075 and #076 - class II by Luminex**

**** Serum 75 ****							**** Serum 76 ****					Manufacturer
Center	DQ5	DQ6	DR103	DR1	DR51	Other	Center	DR4	DP11	Other		
54	7775	6239	2738	2288	2235		54	1810			One Lambda	
206	3993		5279	4169	3416		206	2384			One Lambda	
230	6500		2942	2468	2419		230	NEG			One Lambda	
774	5580	4356					774	NEG			One Lambda	
792	6749	5882	2384	2066	1951		792	1513			One Lambda	
836	5556	4287	3209	2755	2628	DQA1*01	836	1680	1237	DPA1*02	One Lambda	
1160	4263	3488	1425	1230	1108		1160	764			One Lambda	
2400	5210	3195					2400	NEG			One Lambda	
3224	9434	8301	2715	2393	2446		3224	1951			One Lambda	
3753	3112		4000	3283	3363	DR15	3753	1671			One Lambda	
4079	3774	3337	2645	1981	2079		4079	1473	1593		One Lambda	
4661	227	77	661	904	880	DR4,DR7,DR8,DR9 >	4661	470		DR1,DR103,DR7,DR8 >	Lifecodes	
4985	5810	3910					4985	NEG			One Lambda	
8001	2206	1538	2792	2441	2245		8001	1890			One Lambda	
8029	1421	1539	1080	1165	1242		8029	994			Lifecodes	
8035	3979	3364	4104	3173	3289	DR15,DR16	8035	2319	1735		One Lambda	
8050	2648	1433	1714	1253	1349		8050	820			One Lambda	
8079	2587						8079	NEG			One Lambda	
8083	8989	7907	2052				8083	NEG			One Lambda	
8096	NT						8096	NT			One Lambda	
8103		1088					8103	328			Lifecodes	
8107	3695	3870	3111	2263	2486		8107	1969			One Lambda	
8109	4715	3674	2617	2151	2046		8109	1089			One Lambda	
<b>Avg</b>	4677	3749	2675	2249	2199		<b>Avg</b>	1445	1522			
<b>Std</b>							<b>Std</b>					
<b>Dev.S</b>	2366	2247	1138	860	778		<b>Dev.S</b>	633	257			
<b>MFI</b>							<b>MFI</b>					
<b>%CV</b>	51%	60%	43%	38%	35%		<b>%CV</b>	44%	17%			

**Blue** = DSA against cell #073 only

**Gold** = DSA against cell #074 only

**Green** = DSA against cell #073 and #74

**Table 21. Individual laboratory results for Serum #077 and #078 - class II by Luminex**

**** Serum 77 ****					**** Serum 78 ****					
Center	DQ2	DP19	DQA1*05	Other	Manufacturer	Center	DP11	DPA1*02	Other	Manufacturer
54	9702	1971			One Lambda	54	NEG			One Lambda
206	13168				One Lambda	206	NEG			One Lambda
230	6812				One Lambda	230	NEG			One Lambda
774	8112				One Lambda	774	NEG			One Lambda
792	7443	1963			One Lambda	792	NEG			One Lambda
836	10369	1989	10369	DQA1*03,DQA1*04,DQA1*02>	One Lambda	836	1116	1116		One Lambda
1160	4851	1533			One Lambda	1160	NEG			One Lambda
2400	4212				One Lambda	2400	NEG			One Lambda
3224	8108	1883		DR7	One Lambda	3224	NEG			One Lambda
3753	7093				One Lambda	3753	NEG			One Lambda
4079	5370	2112			One Lambda	4079	NEG			One Lambda
4661	1255	33	28	DR1,DR103,DQ6,DR7,DQ5,DR4>	Lifecodes	4661	12	30	DR1,DR103,DR4,DR7 >	Lifecodes
4985	4070				One Lambda	4985	NEG			One Lambda
8001	8963	1309			One Lambda	8001	NEG			One Lambda
8029	2162				Lifecodes	8029	NEG			Lifecodes
8035	8780	2849	12588	DP19,DR16,DQ6,DQ5,DR52>	One Lambda	8035	1359			One Lambda
8050	5404				One Lambda	8050	NEG			One Lambda
8079	4500		5831		One Lambda	8079	NEG			One Lambda
8083	10460	2101			One Lambda	8083	NEG			One Lambda
8096	NT				One Lambda	8096	NT			One Lambda
8103	1313				Lifecodes	8103	NEG			Lifecodes
8107	6827	2309			One Lambda	8107	NEG			One Lambda
8109	7575				One Lambda	8109	NEG			One Lambda
<b>Avg</b>	6661	1823	7204			<b>Avg</b>	829	573		
<b>Std</b>						<b>Std</b>				
<b>Dev.S</b>	3066	712	5549			<b>Dev.S</b>	-	-		
<b>MFI</b>						<b>MFI</b>				
<b>%CV</b>	46%	39%	77%			<b>%CV</b>	-	-		

**Blue** = DSA against cell #073 only

**Gold** = DSA against cell #074 only

**Green** = DSA against cell #073 and #74

# Virtual Crossmatch

**Table 22. Individual Virtual crossmatch results for Serum #77 vs Donor #V1**

Donor #V1 HLA A\*11:01-A\*24:02-B\*15:02-B\*15:05-C\*03:03-C\*08:01-DRB1\*12:02-DRB1\*15:02:01G-DRB3\*03:01-DRB5\*01:02-DQA1\*01:03-DQA1\*06:01-DQB1\*03:01-DQB1\*05:03-DPB1\*05:01-DPB1\*14:01

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
54	77	99%	Positive	A11 (19282) A24 (18667) B62 (3664) B75 (7308)	Negative	no DSA	Unacceptable	
206	77	97%	Positive	A11 (26512) A24 (25667) B62 (3534) B75 (11993)	Positive	no DSA	Unacceptable	
230	77	99%	Positive	A11 (20485) A24 (18860) B62 (3987) B75 (8427)	Negative	no DSA	Unacceptable	
774	77	99%	Positive	A11 (14092) A24 (11368) B75 (6678)	Positive	no DSA	Unacceptable	Based on Class I DSA
792	77	100%	Positive	A11 (15313) A24 (13709) B75 (5833)	Positive	no DSA	Unacceptable	No Class II DSA
836	77	100%	Positive	A24 (18345) B75 (7079) A1101 (19403)	Positive	no DSA	Unacceptable	B*15:05 cannot be assessed. T/B reported together with 1000 MFI as positive cut off. DQA1*01:03/DQB1*05:03 cannot be assessed.
1160	77	99%	Positive	A11 (15503) A24 (13133) B62 (2756) B75 (5313)	Positive	no DSA	Unacceptable	
1461	77		Positive	Cw6 (2111) A11 (4469) A24 (4204) B60 (449) B61 (465) A66 (3508) B78 (1007) B62 (482) B50 (499) B82 (578) B75 (697) B7 (901) B703 (539) B45 (510) B54 (1286) B55 (699) B56 (599) B67 (737) A1 (7040) A25 (4275) A26 (3340) A34 (3639) A23 (4053) A36 (4180) A43 (2831) A80 (5114) B64 (1196) B65 (980) B76	Negative	DQ2 (708)	Unacceptable	
2400	77		Positive	A24 (12794) A1 (13027)	Positive	no DSA	Unacceptable	
3224	77	98%	Positive	A24 (19590) B75 (9461) A1101 (20198)	Positive	no DSA	Unacceptable	Possible Bw6
3753	77	99.2%	Positive	A11 (9711) B62 (1145) B75 (5149)	Positive	no DSA	Unacceptable	Additional DSA: A*24:02(8954)
3966	77	99%	Positive	A11 (16122) A24 (15841) B62 (2359) B75 (6232)	Negative	no DSA	Unacceptable	
4079	77		Positive	A11 (14899) A24 (13959) B62 (3097) B75 (5330)	Negative	no DSA	Unacceptable	

**Table 22. Individual Virtual crossmatch results for Serum #77 vs Donor #V1**

Donor #V1 HLA A\*11:01-A\*24:02-B\*15:02-B\*15:05-C\*03:03-C\*08:01-DRB1\*12:02-DRB1\*15:02:01G-DRB3\*03:01-DRB5\*01:02-DQA1\*01:03-DQA1\*06:01-DQB1\*03:01-DQB1\*05:03-DPB1\*05:01-DPB1\*14:01

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
4661	77	97.7%	Positive	A24 (1807) B62 (291) B75 (307) Cw9 (95) Cw8 (48) A1101 (2234)	Positive	DR12 (4) DR15 (30) DR51 (5) DQ5 (24) DQ7 (56) DPw5 (47) DP14 (21)	Unacceptable	Ab against 152A
4985	77	38%	Positive	A11 (11778) A24 (11312) B75 (4510)	Positive	no DSA	Unacceptable	No class II DSA, only class I DSA
8001	77	99%	Positive	A11 (18081) A24 (15498) B75 (6619)	Positive	no DSA	Unacceptable	*15:05 not in LSAB panel. DRB5*01:02, DQB1*05:03 not in LSAB panel
8035	77	99%	Positive	A11 (16459) A24 (13795) B62 (4808) Bw6 (9460) Cw8 (1228)	Positive	DR52 (1374)	Unacceptable	As per our program, this is Unacceptable-However, some programs may have other options as desensitization--if they can make sure the DSAs are not Complement binding; Our B cell Positivity is based mainly on the Class I DSAs. No Class II DSAs that can clearly account for a B cell positivity was detected; However, possibility of an allelic DQB*05:03 cannot be ruled out-since we have no bead.
8050	77	99%	Positive	A11 (12064) A24 (8467) B62 (2624) B75 (6451) Bw6 (5000)	Positive	no DSA	Unacceptable	Allele specific 24:02 due to Class I DSA
8079	77	100%	Positive	A24 (12114) B75 (4953) A1101 (13979)	Negative	no DSA	Unacceptable	No class II DSA
8080	77	99%	Positive	A11 (17863) A24 (16010) B62 (3756) B75 (6457)	Positive	no DSA	Unacceptable	
8083	77		Positive	A11 (18272) A24 (17314) B75 (6489)	Positive	no DSA	Unacceptable	A11, A24, and B75 are expressed on B cells
8096	77		Positive	A11 (3003) A24 (2345) B75 (2316) Cw3 (3982)	Negative	no DSA	Unacceptable	
8103	77	41%	Positive	A11 (7332) A24 (6402) B15 (6201) B62 (1195) A1101 (7332)	Negative	no DSA	Unacceptable	
8107	77	99%	Positive	A11 (18999) A24 (19318) B62 (3723) B75 (7780)	Positive	no DSA	Unacceptable	High risk of Positive Crossmatch; DQB1*05:03 /DQA1*01:03 and DQA1*06:01 dimers are not on the SA panel. Multiple high titer Class I DSA's will result in a Positive Crossmatch since B cells have high expression of HLA Class I antigens.
8109	77	97%	Positive	A11 (16221) A24 (14901) B62 (3139) B75 (6119) Bw6 (9399)	Positive	no DSA	Unacceptable	

**Table 23. Individual Virtual crossmatch results for Serum #77 vs Donor #V2**

Donor #V2 HLA A\*02:06-A\*32:01-B\*14:01-B\*52:01-C\*04:01:01G-C\*08:02-DRB1\*04:04-DRB1\*07:01-DRB4\*01:01:01G-DQA1\*02:01-DQA1\*03:01:01G-DQB1\*02:02-DQB1\*03:02-DPB1\*03:01-DPB1\*04:02

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
54	77	99%	Positive	Cw4 (3701) B64 (9158)	Positive	DQ2 (5060)	Unacceptable	
206	77	97%	Positive	B64 (15368)	Positive	DQ2 (13168)	Unacceptable	
230	77	99%	Positive	B64 (10002)	Positive	DQ2 (7294)	Unacceptable	
774	77	99%	Positive	B64 (8596)	Positive	DQ2 (3726)	Unacceptable	
792	77	100%	Positive	Cw4 (3983) B64 (7551)	Positive	DR7 (758) DQ2 (4261)	Unacceptable	
836	77	100%	Positive	Cw4 (4143) B64 (9536)	Positive	DQ2 (5621) DQA1*02 (5621)	Unacceptable	T/B reported together with 1000 MFI as a positive cut off. DQA1*02:01/DQB1*02:02.
1160	77	99%	Positive	Cw4 (3465) B64 (7017)	Positive	DQ2 (2655)	Unacceptable	
1461	77		Positive	Cw6 (2111) A11 (4469) A24 (4204) B60 (449) B61 (465) A66 (3508) B78 (1007) B62 (482) B50 (499) B82 (578) B75 (697) B7 (901) B703 (539) B45 (510) B54 (1286) B55 (699) B56 (599) B67 (737) A1 (7040) A25 (4275) A26 (3340) A34 (3639) A23 (4053) A36 (4180) A43 (2831) A80 (5114) B64 (1196) B65 (980) B76 (4000) B18 (831) B35 (561) B41	Positive	DQ2 (708)	Unacceptable	
2400	77		Positive	Cw4 (3029) B64 (6234)	Positive	DQ2 (3322)	Unacceptable	
3224	77	98%	Positive	Cw4 (4720) B64 (12213)	Positive	DR7 (1050) DQ2 (5755)	Unacceptable	Possible Bw6 antibody.
3753	77	99.2%	Positive	Cw4 (2465) B64 (5807)	Positive	DQ2 (7093)	Unacceptable	
3966	77	99%	Positive	B64 (7460)	Positive	DQ2 (6083)	Unacceptable	
4079	77		Positive	Cw4 (3401) B64 (6962)	Positive	DQ2 (5164)	Unacceptable	
4661	77	97.7%	Positive	Cw4 (189) B52 (62) A32 (41) B64 (1006) Cw8 (62)	Positive	DR4 (28) DR7 (154) DQ2 (1006) DQ8 (13) DPw3 (7) DP402 (3)	Unacceptable	Ab against Epitope 97w. Ab against 45GE3
4985	77	38%	Borderline -	Cw4 (3310) B64 (5333)	Positive	DQ2 (4207)	Unacceptable	also Class I DSA B64 C4
8001	77	99%	Positive	Cw4 (2296) B64 (8541)	Positive	DR7 (791) DQ2 (5137)	Unacceptable	C*08:02 not in LSAB panel
8035	77	99%	Positive	Cw4 (3906) B52 (1191) B64 (11655) Bw6 (9460) Cw8 (1228)	Positive	DR7 (1258) DQ2 (8780)	Unacceptable	As per our program, this is Unacceptable-However, some programs may have other options as desensitization--if they can make sure the DSAs are not Complement binding.
8050	77	99%	Positive	Cw4 (2292) B64 (7765) Bw6 (5000)	Positive	DQ2 (5404)	Unacceptable	Positive due to Class I DSA
8079	77	100%	Positive	Cw4 (2031) B64 (6564)	Positive	DQ2 (3230)	Unacceptable	
8080	77	99%	Positive	Cw4 (3435) B64 (8426)	Positive	DQ2 (5327)	Unacceptable	
8083	77		Positive	Cw4 (3999) B64 (8182)	Positive	DQ2 (5099)	Unacceptable	Also B64 and Cw4 which are expressed on B cells
8096	77		Negative		Negative		Acceptable	
8103	77	41%	Positive	B14 (1892)	Positive	DQ2 (1313)	Unacceptable	
8107	77	99%	Positive	Cw4 (4666) B64 (9973)	Positive	DQ2 (6827)	Unacceptable	Donor C*08:02 is not on the SA panel.
8109	77	97%	Positive	Cw4 (3119) B64 (8109) Bw6 (9399)	Positive	DQ2 (4406)	Unacceptable	



**Table 24. Individual Virtual crossmatch results for Serum #77 vs Donor #V3**

Donor #V3 HLA A\*02:01-A\*23:01-B\*44:03-B\*49:01-C\*04:01-C\*07:01-DRB1\*08:01-DRB1\*13:02-DRB3\*03:01-DQA1\*01:02:01G-DQA1\*04:01-DQB1\*04:02-DQB1\*06:04-DPB1\*02:01:02G-DPB1\*04:02:01G

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
54	77	99%	Positive	A23 (18265) Cw7 (16035)	Negative	no DSA	Unacceptable	
206	77	97%	Positive	A23 (26176) Cw7 (26428)	Positive	no DSA	Unacceptable	
230	77	99%	Positive	A23 (18252) Cw7 (17467)	Negative	no DSA	Unacceptable	
774	77	99%	Positive	A23 (13459) Cw7 (10868)	Positive	no DSA	Unacceptable	Based on Class I DSA
792	77	100%	Positive	Cw4 (3983) A23 (14154)	Positive	DR52 (638)	Unacceptable	No SAB bead for C*07:01
836	77	100%	Positive	Cw4 (4143) A23 (18470) Cw7 (18849)	Positive	no DSA	Unacceptable	T/B reported together with 1000 MFI as a positive cut off.
1160	77	99%	Positive	Cw4 (3465) A23 (13258) Cw7 (11791)	Positive	no DSA	Unacceptable	Although there is no C*07:01 beads in the SAB panel
1461	77		Positive	(4204) B60 (449) B61 (465) A66 (3508) B78 (1007) B62 (482) B50 (499) B82 (578) B75 (697) B7 (901) B703 (539) B45 (510) B54 (1286) B55 (699) B56 (599) B67 (737) A1 (7040) A25 (4275) A26 (3340) A34 (3639) A23 (4053) A36 (4180) A43 (2831) A80 (5114) B64 (1196) B65 (980) B76 (4000) B18 (831) B35 (561) B41	Negative	DQ2 (708)	Unacceptable	
2400	77		Positive	Cw4 (3028) A23 (12811) Cw7 (11206)	Positive	no DSA	Unacceptable	
3224	77	98%	Positive	Cw4 (4720) A23 (19679) Cw7 (15735)	Positive	no DSA	Unacceptable	
3753	77	99.2%	Positive	Cw4 (2465) A23 (9568) Cw7 (9319)	Positive	no DSA	Unacceptable	
3966	77	99%	Positive	Cw4 (3744) A23 (15618) Cw7 (13500)	Negative	no DSA	Unacceptable	C*04:06 is not in SAB panel
4079	77		Positive	A23 (13797) Cw7 (11857)	Negative	no DSA	Unacceptable	
4661	77	97.7%	Positive	Cw4 (189) B49 (1121) B44 (5418) A23 (1610) Cw7 (617)	Positive	DR8 (1) DQ4 (28) DPw2 (11) DP402 (35)	Unacceptable	Ab against 160DG
4985	77	38%	Positive	Cw4 (3310) A23 (11667)	Positive	no DSA	Unacceptable	no class II, only Class I DSA A23 Cw4
8001	77	99%	Positive	Cw4 (2296) A23 (15360)	Positive	no DSA	Unacceptable	C*07:01 not in LSAB panel. DRB1*13:02 not in LSAB panel

**Table 24. Individual Virtual crossmatch results for Serum #77 vs Donor #V3**

Donor #V3 HLA A\*02:01-A\*23:01-B\*44:03-B\*49:01-C\*04:01-C\*07:01-DRB1\*08:01-DRB1\*13:02-DRB3\*03:01-DQA1\*01:02:01G-DQA1\*04:01-DQB1\*04:02-DQB1\*06:04-DPB1\*02:01:02G-DPB1\*04:02:01G

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
8035	77	99%	Positive	Cw4 (3906) A23 (16434) Cw7 (13689)	Positive	DR52 (1374)	Unacceptable	As per our program, this is Unacceptable-However, some programs may have other options as desensitization--if they can make sure the DSAs are not Complement binding. Our B cell Positivity is based mainly on the Class I DSAs. No Class II DSAs that can clearly account for a B cell positivity was detected.
8050	77	99%	Positive	Cw4 (2292) A23 (10194) Cw7 (10324)	Positive	no DSA	Unacceptable	Due to Class I DSA
8079	77	100%	Positive	Cw4 (2031) A23 (12521)	Negative	no DSA	Unacceptable	No class II DSA
8080	77	99%	Positive	Cw4 (3435) A23 (15973) Cw7 (15615)	Positive	no DSA	Unacceptable	
8083	77		Positive	Cw4 (3999) A23 (17235)	Positive	no DSA	Unacceptable	A23 and Cw4 which are express on B cells
8096	77		Positive	B44 (1850) A23 (3022)	Negative	no DSA	Unacceptable	
8103	77	41%	Positive	A23 (6359) Cw7 (2539)	Negative	no DSA	Unacceptable	
8107	77	99%	Positive	Cw4 (4666) A23 (18912) Cw7 (16975)	Positive	no DSA	Unacceptable	DSA C*07:01 is not on the SA Panel. Multiple high titer Class I DSA's will result in a Positive Crossmatch since B cells have high expression of HLA Class I antigens.
8109	77	97%	Positive	Cw4 (3119) A23 (15510) Cw7 (13274)	Positive	no DSA	Acceptable	

**Table 25. Individual Virtual crossmatch results for Serum #77 vs Donor #V4**

Donor #V4 HLA A\*11:01-A\*29:02-B\*13:01-B\*44:03-C\*04:06-C\*16:01-DRB1\*07:01-DRB1\*15:02:01G-DRB4\*01:01-DRB5\*01:08N-DQA1\*01:01-DQA1\*02:01-DQB1\*02:02-DQB1\*05:01-DPB1\*01:01-

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
54	77	99%	Positive	Cw4 (3701) A11 (19282)	Positive	DQ2 (5065)	Unacceptable	
206	77	97%	Positive	A11 (26512)	Positive	DQ2 (13168)	Unacceptable	
230	77	99%	Positive	A11 (20341)	Positive	DQ2 (7274)	Unacceptable	
774	77	99%	Positive	A11 (14092)	Positive	DQ2 (3736)	Unacceptable	
792	77	100%	Positive	Cw4 (3983) A11 (15313)	Positive	DQ2 (7443)	Unacceptable	
836	77	100%	Positive	A1101 (19403)	Positive	DQ2 (5621) DQ5 (1080) DQA1*01 (1080) DQA1*02 (5621)	Unacceptable	C*04:06 cannot be assessed. T/B reported together with 1000 MFI as a positive cut off. DQA1*02:01/DQB1*02:02 and DQA1*01:01/DQB1*05:01
1160	77	99%	Positive	Cw4 (3465) A11 (15503)	Positive	DQ2 (2655)	Unacceptable	
1461	77		Positive	(4204) B60 (449) B61 (465) A66 (3508) B78 (1007) B62 (482) B50 (499) B82 (578) B75 (697) B7 (901) B703 (539) B45 (510) B54 (1286) B55 (699) B56 (599) B67 (737) A1 (7040) A25 (4275) A26 (3340) A34 (3639) A23 (4053) A36 (4180) A43 (2831) A80 (5114) B64 (1196) B65 (980) B76 (4000) B18 (831) B35 (561) B41	Positive	DQ2 (708)	Unacceptable	
2400	77		Positive	Cw4 (3029) A11 (13027)	Positive	DQ2 (3322)	Unacceptable	
3224	77	98%	Positive	Cw4 (4721) A1101 (20198)	Positive	DR7 (1050) DQ2 (5358) DQ5 (1209)	Unacceptable	
3753	77	99.2%	Positive	Cw4 (2465) Cw6 (7449) A11 (9711)	Positive	DQ2 (7093)	Unacceptable	Per 2008 HLA Dictionary C*04:06 has unclear equivalency either Cw4 or Cw6
3966	77	99%	Positive	Cw4 (3744) A11 (16122)	Positive	DQ2 (6083)	Unacceptable	C*04:06 is not in SAB panel
4079	77		Positive	Cw4 (3401) A11 (14899)	Positive	DQ2 (5164)	Unacceptable	The donor renews one paternal antigen expressed in child and for which we observed a very low reactivity (DQ5) not reported yet in Abs testing results. It cannot be a major problem as risk but mainly anti-A11 DSA.
4661	77	97.7%	Positive	Cw4 (189) B13 (895) B44 (5418) A29 (183) Cw16 (64) A1101 (2234)	Positive	DR7 (154) DR15 (30) DR51 (22) DQ2 (1006) DQ5 (149) DPw1 (46)	Unacceptable	Ab against 152A
4985	77	38%	Positive	Cw4 (3310) A11 (11778)	Positive	DQ2 (4207)	Unacceptable	
8001	77	99%	Positive	A11 (18081)	Positive	DR7 (791) DQ2 (5137) DQA1*01 (557)	Unacceptable	C*04:06 not in LSAB panel. DRB5*01:08N not in LSAB panel

**Table 25. Individual Virtual crossmatch results for Serum #77 vs Donor #V4**

Donor #V4 HLA A\*11:01-A\*29:02-B\*13:01-B\*44:03-C\*04:06-C\*16:01-DRB1\*07:01-DRB1\*15:02:01G-DRB4\*01:01-DRB5\*01:08N-DQA1\*01:01-DQA1\*02:01-DQB1\*02:02-DQB1\*05:01-DPB1\*01:01-

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
8035	77	99%	Positive	A11 (16459)	Positive	DR7 (1258) DQ2 (8780) DQ5 (1486)	Unacceptable	As per our program, this is Unacceptable- However, some programs may have other options as desensitization--if they can make sure the DSAs are not Complement binding. In addition, no bead exists for C*04:06 as per our panel.
8050	77	99%	Positive	Cw4 (2292) A11 (12064)	Positive	DQ2 (5404)	Unacceptable	Positive due to Class I DSA
8079	77	100%	Positive	A1101 (13979)	Negative	no DSA	Unacceptable	No class II DSA
8080	77	99%	Positive	Cw4 (3435) A11 (17863)	Positive	DQ2 (5327)	Unacceptable	
8083	77		Positive	A11 (18272)	Positive	DQ2 (5099)	Unacceptable	Also A11 which is expressed on B cells
8096	77		Positive	A11 (3003) B13 (2802) B44 (1850)	Negative	no DSA	Unacceptable	
8103	77	41%	Positive	A11 (7332) A1101 (7332)	Positive	DQ2 (1313)	Unacceptable	
8107	77	99%	Positive	Cw4 (4666) A11 (18999)	Positive	DQ2 (6827)	Unacceptable	DSA C*04:06 is not on the SA Panel
8109	77	97%	Positive	Cw4 (3119) A11 (16221)	Positive	DQ2 (4406)	Unacceptable	

**Table 26. Individual Virtual crossmatch results for Serum #78 vs Donor #V1**

Donor #V1 HLA A\*11:01-A\*24:02-B\*15:02-B\*15:05-C\*03:03-C\*08:01-DRB1\*12:02-DRB1\*15:02:01G-DRB3\*03:01-DRB5\*01:02-DQA1\*01:03-DQA1\*06:01-DQB1\*03:01-DQB1\*05:03-DPB1\*05:01-DPB1\*14:01

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
54	78	97%	Positive	A11 (1808)	Negative	no class II DSA	Unacceptable	
206	78	96%	Negative		Negative	no class II DSA	Acceptable	
230	78	91%	Negative	A1101 (2306)	Negative	no class II DSA	Acceptable	
774	78	95%	Negative		Negative	no class II DSA	Acceptable	
792	78	98%	Negative	B75 (1039)	Negative	no class II DSA	Acceptable	No Class II DSA
836	78	97%	Positive	A1101 (2106)	Positive	no class II DSA	Expected Flow Negative/ equivocal	B*15:05 cannot be assessed. T/B reported together with 1000 MFI as positive cut off. DQA1*01:03/DQB1*05:03 cannot be assessed.
1160	78	95%	Negative		Negative	no class II DSA	Acceptable	Weak DSA against A11 (MFI = 868), B75 (MFI = 732), patient will be monitored as high risk for DSA development post-transplant
1461	78		Negative	A203 (810)A2 (703) B78 (354) B51 (414)A33 (729)A68 (471) B64 (904) B65 (721) B18 (777) B59 (339) B8 (1338)	Negative	no class II DSA	Acceptable	
2400	78		Negative		Negative	no class II DSA	Acceptable	
3224	78	97%	Borderline	B75 (1768)A1101 (3063)	Borderline	no class II DSA	Unacceptable	Physical crossmatch recommended
3753	78	95.9%	Negative		Negative	no class II DSA	Acceptable	
3966	78	96%	Negative		Negative	no class II DSA	Acceptable	
4079	78		Negative		Negative	no class II DSA	Acceptable	
4661	78	87%	Negative	B62 (201) B75 (245) Cw9 (61) Cw8 (67)	Negative	DR12 (1) DQ5 (98) DQ7 (57) DPw5 (57) DP14 (42)	Acceptable	
4985	78	26%	Negative		Negative	no class II DSA	Acceptable	No Class I DSA; no class II DSA
8001	78	96%	Borderline	B75 (603)	Negative	no class II DSA	Unacceptable	B*15:05 not in LSAB panel; DRB5*01:02, DQB1*05:03 not in LSAB panel
8035	78	95%	Negative	B75 (1384)A1101 (3326)	Negative	no class II DSA	Acceptable	In cases like these we would recommend a real cross match because the strength of the reaction will depend on the density of the antigens on a specific donor. NO class II DSA detected
8050	78	96%	Negative		Negative	no class II DSA	Acceptable	
8079	78	75%	Negative		Negative	no class II DSA	Acceptable	No class I DSA; No class II DSA
8080	78	95%	Negative		Negative	no class II DSA	Acceptable	
8083	78		Negative		Negative	no class II DSA	Acceptable	
8096	78		Negative		Negative	no class II DSA	Acceptable	
8103	78	11%	Negative		Negative	no class II DSA	Acceptable	Please note that the B-cell values recorded were extremely low. B-cell MFI levels were extremely low
8107	78	95%	Negative	A11 (1365) B75 (1158)	Negative	weak DSA A*11:01 (mfi 1365), B*15:02(mfi 1158)	Low risk	No Class II DSA
8109	78	98%	Negative		Negative	no class II DSA	Acceptable	

**Table 27. Individual Virtual crossmatch results for Serum #78 vs Donor #V2**

Donor #V2 HLA A\*02:06-A\*32:01-B\*14:01-B\*52:01-C\*04:01:01G-C\*08:02-DRB1\*04:04-DRB1\*07:01-DRB4\*01:01:01G-DQA1\*02:01-DQA1\*03:01:01G-DQB1\*02:02-DQB1\*03:02-DPB1\*03:01-DPB1\*04:02

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
54	78	97%	Positive	A2 (9227) B64 (7593)	Negative	no class II DSA	Unacceptable	
206	78	96%	Positive	A2 (22356) B64 (16901)	Positive	no class II DSA	Unacceptable	
230	78	91%	Positive	A2 (13168) B64 (9535)	Negative	no class II DSA	Unacceptable	
774	78	95%	Positive	A2 (7244) B64 (6045)	Positive	no class II DSA	Unacceptable	Based on Class I DSA
792	78	98%	Positive	A2 (7912) B64 (6895)	Positive	no class II DSA	Unacceptable	No Class II DSA
836	78	97%	Positive	A2 (9811) B64 (8037) Cw8 (1084)	Positive	no class II DSA	Unacceptable	T/B reported together with 1000 MFI as a positive cut off.
1160	78	95%	Positive	A2 (5848) B64 (5024)	Positive	no class II DSA	Unacceptable	
1461	78		Positive	A203 (810)A2 (703) B78 (354) B51 (414)A33 (729)A68 (471) B64 (904) B65 (721) B18 (777) B59 (339) B8 (1338)	Negative	no class II DSA	Unacceptable	
2400	78		Positive	A2 (5792) B64 (5128)	Positive	no class II DSA	Unacceptable	
3224	78	97%	Positive	A2 (11647) B64 (10476)	Positive	no class II DSA	Unacceptable	
3753	78	95.9%	Positive	A2 (11235) B64 (8673)	Positive	no class II DSA	Unacceptable	
3966	78	96%	Positive	A2 (8867) B64 (8141)	Negative	no class II DSA	Unacceptable	
4079	78		Positive	A2 (6452) B64 (5445)	Negative	no class II DSA	Unacceptable	
4661	78	87%	Positive	A2 (1117) B52 (118)A32 (32) B64 (1184) Cw8 (107)	Positive	DR4 (18) DR7 (36) DR53 (6) DQ2 (67) DQ8 (30) DPw3 (59) DP402 (36)	Unacceptable	Ab against 170RH
4985	78	26%	Positive	A2 (7808) B64 (5971)	Positive	no class II DSA	Unacceptable	no class II DSA, only class I DSA A2
8001	78	96%	Positive	A2 (9895) B64 (7947)	Positive	no class II DSA	Unacceptable	C*08:02 not in LSAB panel
8035	78	95%	Positive	A2 (12220) B64 (9609)	Positive	no class II DSA	Unacceptable	As per our program, this is Unacceptable- However, some programs may have other options as desensitization--if they can make sure the DSAs are not Complement binding. Our B cell Positivity is based mainly on the Class I DSAs. No Class II DSAs that can clearly account for a B cell positivity was detected.
8050	78	96%	Positive	A2 (9853) B64 (8683)	Positive	no class II DSA	Unacceptable	Due to Class I DSA
8079	78	75%	Positive	A2 (6764) B64 (5483)	Negative	no class II DSA	Unacceptable	No class II DSA
8080	78	95%	Positive	A2 (7455) B64 (7936)	Positive	no class II DSA	Unacceptable	
8083	78		Positive	A2 (7736) B64 (6923)	Positive	no class II DSA	Unacceptable	A2 and B64 which are expressed on B cells
8096	78		Positive	A2 (1018) B52 (781) B64 (1101)	Negative	no class II DSA	Unacceptable	
8103	78	11%	Positive	A2 (1544) B14 (1643)	Negative	no class II DSA	Unacceptable	
8107	78	95%	Positive	A2 (9164) B64 (8317)	Positive	no class II DSA	Unacceptable	Multiple high titer Class I DSA's will result in a Positive Crossmatch since B cells have high expression of HLA Class I antigens.
8109	78	98%	Positive	A2 (7746) B64 (6788)	Positive	no class II DSA	Unacceptable	

**Table 28. Individual Virtual crossmatch results for Serum #78 vs Donor #V3**

Donor #V3 HLA A\*02:01-A\*23:01-B\*44:03-B\*49:01-C\*04:01-C\*07:01-DRB1\*08:01-DRB1\*13:02-DRB3\*03:01-DQA1\*01:02:01G-DQA1\*04:01-DQB1\*04:02-DQB1\*06:04-DPB1\*02:01:02G-DPB1\*04:02:01G

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
54	78	97%	Positive	A2 (8955)	Negative	no class II DSA	Unacceptable	
206	78	96%	Positive	A2 (22356)	Positive	no class II DSA	Unacceptable	
230	78	91%	Positive	A2 (11976)	Borderline	no class II DSA	Unacceptable	
774	78	95%	Positive	A2 (7196)	Positive	no class II DSA	Unacceptable	Based on Class I DSA
792	78	98%	Positive	A2 (7800)	Positive	no class II DSA	Unacceptable	No Class II DSA
836	78	97%	Positive	A2 (9924)	Positive	no class II DSA	Unacceptable	T/B reported together with 1000 MFI as a positive cut off.
1160	78	95%	Positive	A2 (5949)	Positive	no class II DSA	Unacceptable	
1461	78		Positive	A203 (810)A2 (703) B78 (354) B51 (414)A33 (729)A68 (471) B64 (904) B65 (721) B18 (777) B59 (339) B8 (1338)	Negative	no class II DSA	Unacceptable	
2400	78		Positive	A2 (5591)A29 (2503)	Positive	no class II DSA	Unacceptable	
3224	78	97%	Positive	A2 (10918)	Positive	no class II DSA	Unacceptable	
3753	78	95.9%	Positive	A2 (11235)	Positive	no class II DSA	Unacceptable	
3966	78	96%	Positive	A2 (8867)	Negative	no class II DSA	Unacceptable	
4079	78		Positive	A2 (6005)	Negative	no class II DSA	Unacceptable	
4661	78	87%	Positive	A2 (1117) B49 (601) B44 (2932)A23 (879) Cw7 (453)	Positive	DR8 (76) DQ4 (42) DPw2 (55) DP402 (36)	Unacceptable	Ab against 162GLS
4985	78	26%	Positive	A2 (7808)	Positive	no class II DSA	Unacceptable	no class II DSA, only class I A2
8001	78	96%	Positive	A2 (9122)	Positive	no class II DSA	Unacceptable	C*07:01 not in LSAB panel. DRB1*13:02 not in LSAB panel
8035	78	95%	Positive	A2 (12220)	Positive	no class II DSA	Unacceptable	As per our program, this is Unacceptable- However, some programs may have other options as desensitization--if they can make sure the DSAs are not Complement binding. Our B cell Positivity is based mainly on the Class I DSAs. No Class II DSAs that can clearly account for a B cell positivity was detected
8050	78	96%	Positive	A2 (9853)	Positive	no class II DSA	Unacceptable	Due to Class I DSA
8079	78	75%	Positive	A2 (6662)	Negative	no class II DSA	Unacceptable	No class II DSA
8080	78	95%	Positive	A2 (7591)	Positive	no class II DSA	Unacceptable	
8083	78		Positive	A2 (7550)	Positive	no class II DSA	Unacceptable	A2 which is expressed on B cells
8096	78		Positive	A2 (1018)	Negative	no class II DSA	Unacceptable	
8103	78	11%	Positive	A2 (1551)	Negative	no class II DSA	Unacceptable	
8107	78	95%	Positive	A2 (9164)	Positive	no class II DSA	Unacceptable	High titer Class I DSA's will result in a Positive Crossmatch since B cells have high expression of HLA Class I antigens.
8109	78	98%	Positive	A2 (8078)	Positive	no class II DSA	Unacceptable	

**Table 29. Individual Virtual crossmatch results for Serum #78 vs Donor #V4**

Donor #V4 HLA A\*11:01-A\*29:02-B\*13:01-B\*44:03-C\*04:06-C\*16:01-DRB1\*07:01-DRB1\*15:02:01G-DRB4\*01:01-DRB5\*01:08N-DQA1\*01:01-DQA1\*02:01-DQB1\*02:02-DQB1\*05:01-DPB1\*01:01-

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
54	78	97%	Positive	A11 (1808)A29 (4379)	Negative	no class II DSA	Unacceptable	
206	78	96%	Positive	A29 (6741)	Positive	no class II DSA	Unacceptable	
230	78	91%	Borderline	A29 (6340)	Negative	no class II DSA	Unacceptable	
774	78	95%	Positive	A29 (5911)	Positive	no class II DSA	Unacceptable	Based on Class I DSA
792	78	98%	Borderline	A29 (3821)	Negative	no class II DSA	Unacceptable	No Class II DSA
836	78	97%	Positive	A29 (4694)A1101 (2106)	Positive	no class II DSA	Unacceptable	T/B reported together with 1000 MFI as a positive cut off.
1160	78	95%	Positive	A11 (868)A29 (2491)	Positive	no class II DSA	Unacceptable	Based on the overall sensitization of the recipient, we should be able to find a zero DSA donor for this patient.
1461	78		Negative	A203 (810)A2 (703) B78 (354) B51 (414)A33 (729)A68 (471) B64 (904) B65 (721) B18 (777) B59 (339) B8 (1338)	Negative	no class II DSA	Acceptable	
2400	78		Borderline	A29 (2503)	Positive	no class II DSA	Unacceptable	
3224	78	97%	Positive	A29 (6260)A1101 (3063)	Positive	no class II DSA	Unacceptable	
3753	78	95.9%	Borderline	A29 (5247)	Borderline	no class II DSA	Unacceptable	Donor may be acceptable if patient is heart, lung or liver patient, or for a kidney with augmented immunosuppression and close post-transplant monitoring. cPRA is 95%, for renal transplant could go to KPD or wait for another donor.
3966	78	96%	Positive	A29 (4105)	Negative	no class II DSA	Unacceptable	
4079	78		Positive	A29 (2953)	Negative	no class II DSA	Unacceptable	
4661	78	87%	Positive	B13 (437) B44 (2932)A29 (213) Cw16 (83)	Positive	DR7 (36) DR53 (6) DQ2 (67) DQ5 (164) DPw1 (60)	Unacceptable	Ab against 162GLS
4985	78	26%	Borderline	A29 (3496)	Borderline	no class II DSA	wk DSA, unacceptable, if previous exposure	no class II DSA
8001	78	96%	Positive	A29 (4836)	Positive	no class II DSA	Unacceptable	C*04:06 not in LSAB panel. DRB5*01:08N not in LSAB panel
8035	78	95%	Borderline	A29 (6352)A1101 (3326)	Positive	no class II DSA	POTENTIAL POSITIVE	In cases like these we would recommend a real cross match because the strength of the reaction will depend on the density of the antigens on a specific donor. Our B cell Positivity is based mainly on the Class I DSAs. No Class II DSAs that can clearly account for a B cell positivity was detected
8050	78	96%	Borderline	A29 (4381)	Borderline	no class II DSA	Unacceptable	Unpredictable crossmatch due to Class I DSA



**Table 29. Individual Virtual crossmatch results for Serum #78 vs Donor #V4**

Donor #V4 HLA A\*11:01-A\*29:02-B\*13:01-B\*44:03-C\*04:06-C\*16:01-DRB1\*07:01-DRB1\*15:02:01G-DRB4\*01:01-DRB5\*01:08N-DQA1\*01:01-DQA1\*02:01-DQB1\*02:02-DQB1\*05:01-DPB1\*01:01-

Center	Patient	CPRA	Virtual T Cell Prediction	Class I DSA (MFI)	Virtual B-cell prediction	Class II DSA (MFI)	Risk Assessment	Comments
8079	78	75%	Positive	A29 (3317)	Negative	no class II DSA	Unacceptable	No class II DSA
8080	78	95%	Borderline	A29 (3786)	Borderline	no class II DSA		Borderline, communicate with the program
8083	78		Positive	A29 (3611)	Positive	no class II DSA	Unacceptable	A29 which is expressed on B cells
8096	78		Positive	A29 (934)	Negative	no class II DSA	Unacceptable	
8103	78	11%	NT		NT			
8107	78	95%	Borderline	A29 (4042)	Positive	no class II DSA		A*11:01 is self antibody. Donor C*04:06 is not on the SA panel.. Depending upon the donor expression of A*29:02 we expect either a positive or a weak positive T cell crossmatch , which will classify a moderate risk for positive crossmatch. Depending upon the donor expression of HLA A*29:02 the result could be Negative or weak Positive. This represents a low to moderate risk for a positive crossmatch.
8109	78	98%	Borderline	A29 (4083)	Borderline	no class II DSA	Discuss with clinician in context of other clinical information	