Report of the 8th Flow and Virtual Crossmatch Exchange
September 14, 2016

Cells	43-44
Serum	45-48

For the 8th Flow and Virtual Crossmatch Exchange, labs performed the actual flow crossmatch on a virtual donor-patient pair (**Donor 4 vs. MX-041**) from Exchange 7. A comparison of virtual crossmatch predictions against actual crossmatch outcome (**cell 44 vs. serum 045**) are summarized in part 1 of this report. Part 2 summarizes the flow cytometric crossmatch results for 2 cells (**cell nos. 43 - 44**) against 4 sera (**serum nos. 45 - 48**), and examines the single antigen data for the 4 sera. Finally, in part 3, the virtual crossmatch predictions for serum 47 and serum 48 against 4 potential donors (V1 - V4) are examined.

Part 1

Actual Flow Cytometric Crossmatch vs. Virtual Crossmatch

Serum (patient) MX-041 from Flow Crossmatch Exchange 7 (June, 2016) was re-examined as serum 45 in this present study. Seventeen laboratories performed the actual flow crossmatch (FCXM) on serum 45 against cell 44 (virtual donor 4 from Exchange 7). Individual flow crossmatch results for this cell-serum pair are summarized in Table 1a. T-cell crossmatch results were reported as positive by 13 of 17 reporting labs, with 1 lab noting the positivity as weak. Weak class I DSA (B41) were reported against cell 44 with median MFI value = 2046. For the B-cell crossmatch, 14 out of 16 labs reported it as positive. Two labs were unable to report results. Anti-DPw4 and DP402 reactivity was reported against cell 44, with labs reporting respective MFI values of 4018 and 4493.

Table 1a. Individual Actual Flow crossmatch results and DSA reported for Cell #044 vs. Serum #045

Center	T Cell Pos cutoff	T Cell MCS	RATIO	T-Cell RESULT	Class I DSA(MFI)	B Cell Pos cutoff	B-cell MCS	RATIO	B-Cell RESULT	Class II DSA(MFI)
23	10	22		weak POS	B41(1474)	40	64		POS	DP402(4200)
206	2.98	11.3	2.07	NEG	no DSA	4.94	106.65	6.66	POS	no DSA
615	T neg + 40	4		NEG	NT	B neg + 40	111		POS	NT
774	50	75		POS	B41(2534)	100	182		POS	no DSA
792	52	98		POS	B41(1458)	106	188		POS	DPw4(3641)
836	70	67		Equivocal	B41(1871), B*41:02 (1399)	135	116		Equivocal	DPw4(3989), DR8(2214)
1160	90	120		POS	B41(1799)	120	243		POS	DP402(4572)
2400	40	73		POS	B41(3234)	80	207		POS	DPw4(9376)
3224	70	51		POS	B41(2220)	140	141		POS	DP402(4493)
3625	40 MCS	50		POS	B41(1699)	40 MCS	114		POS	DPw4(4018)
3753	50	65		POS	B41(2563)	100	118		POS	DP402(4534)
3966	20	39		POS	NT	40	218		POS	NT
4345				NEG	NT				POS	NT
4661	15	396		POS	no DSA	30	417.92		POS	DP402(1238)
5219	1		2.19	POS	NT	1.2			Not interpre	NT
8001	50	99		POS	B41(2771)	100	191		POS	DPw4(6971)
8096	50	241		POS	no DSA	NT			NT	no DSA

Table 1b. Summary of Actual Flow Crossmatch results (Exchange 8) vs. Virtual Crossmatch (Exchange 7) results

Exchange 008						Exchange 007				
Actual Flow Crossmatch						Virtual Crossmatch				
Cell no.	Serum no.	#Labs	T-cell Results	B-cell Results		Donor	Serum no.	#Labs	T-cell Prediction	B-cell Prediction
44	45	17	POS (13) *NEG (3)* NT (1)	POS (14) NT (3)		V4	41	12	NEG (6) POS (4) Borderline (2)	POS (8) NEG (4)

    < 80% agreement

A comparison of current FCXM results against previous VXM results is summarized in Table 1b. Originally, 12 labs submitted virtual crossmatch predictions for serum MX-041 against virtual donor 4 (V4) in Exchange 7. All 12 labs performed the actual flow crossmatch in this current study.   A comparison of actual FCXM results versus VXM predictions for individual labs are summarized in Table 1c. For virtual T-cell predictions, no agreement was reached as 6 labs predicted the T-cell crossmatch to be negative, 4 predicted it to be positive, and 2 predicted borderline results. Based on single antigen results at the time, weak anti-B41(2205) reactivity against virtual donor 4 was reported by 8 labs, while 2 labs reported no class I DSA were present. As with the T-cell predictions, no agreement was reached for the B-cell predictions. Eight labs predicted the B-cell cross-match to be positive and 4 predicted it to be negative. A number of labs (n=10) reported moderate DP4(DP402) reactivity against donor 4, with MFI = 4386.

Table 1c. Individual Actual Flow Crossmatch (Exchange 8) results vs. Virtual Crossmatch (Exchange 7) results

	Exhchange 008					Exhchange 007			
	Actual Flow Crossmatch - Serum 45 vs. Cell 44					Virtual Crossmatch - Patient MX-041 vs. Donor 4			
Center	T-Cell RESULT	Class I DSA(MFI)	B-Cell RESULT	Class II DSA(MFI)	Center	Virtual T-cell Prediction	Class I DSA (MFI)	Virtual B-cell Prediction	Class II DSA (MFI)
23	Weak Positive	B41(1474)	Positive	DP402(4200)	23	Negative	B41(2526)	Negative	DPB1*04:02(4826)
206	Negative	no DSA	Positive	no DSA	206	Negative	no DSA	Negative	none
774	Positive	B41(2534)	Positive	no DSA	774	Positive	B41(2000)	Negative	DP402(3000), DP105
792	Positive	B41(1458)	Positive	DPw4(3641)	792	Negative/Borderline Positive	A30(472), B4101(1454)	Positive	DP0402(3936)
836	Equivocal	B41(1871), B*41:02 (1399)	NT	DPw4(3989), DR8(2214)	836	Positive		Positive	
1160	Positive	B41(1799)	Positive	DP402(4572)	1160	Borderline Negative	B41(1149)	Positive	DP4(3472)
2400	Positive	B41(3234)	Positive	DPw4(9376)	2400	Weak Positive	B*41:02(3674)	Weak Positive	DPB1*04:02(4640)
3224	Positive	B41(2220)	Positive	DP402(4493)	3224	Positive	B41(2155)	Positive	DPB1*04:02(4726)
3625	Positive	B41(1699)	Positive	DPw4(4018)	3625	Negative	B41(836)	Positive	DPB1*04:02(3471)
3753	Positive	B41(2563)	Positive	DP402(4534)	3753	Negative	B41(2409)	Negative	DP402(4215)
3966	Positive	NT	Positive	NT	3966	Negative		Positive	DP4(2660)
8001	Positive	B41(2771)	Positive	DPw4(6971)	8001	Negative	no DSA	Positive	DPB1*04:02(4562)

In contrast to VXM predictions, good agreement was reached for the actual flow crossmatch. T-cell crossmatch results were reported as positive by 10 labs (83%). One lab reported the T-cell crossmatch as negative and another noted the results were ambiguous. For the actual B-cell crossmatch, complete agreement was reached as 11/11 labs reported the actual B-cell crossmatch as positive.

For the T-cell crossmatch, only 3 predictions were consistent with actual FCXM results. Three out of the 4 labs predicting a positive crossmatch reported the actual flow crossmatch as positive, while 5 out of 6 labs predicting a negative T-cell crossmatch, reported the actual FCXM as positive. Virtual B-cell predictions were more consistent with actual FCXM results, as 7 of the 8 labs predicting a positive B-cell crossmatch, also reported the actual B-cell crossmatch as positive. The 4 labs predicting a negative B-cell crossmatch reported the actual B-cell crossmatch as positive.

The reporting of DSA and DSA strength was consistent among labs from Exchange 7 to Exchange 8. In Exchange 7, anti-B41 (2205) reactivity was reported against donor 4. In this present study, anti-B41 reactivity was once again reported with MFI values (2046) similar to those reported in Exchange 7. For class II, labs reported anti-DP4 (3704) and -DP402 (4386) reactivity against donor 4 in Exchange 7. In this present study, anti-DP4 and -DP402 reactivity was once again reported with moderate MFI values of 4018 and 4493, respectively.

Part 2
Flow Cytometric Crossmatch

Flow crossmatch results for cell 43 and 44 versus serum samples 45 - 48 are summarized in Table 2 and individual laboratory results, along with reported DSA for each serum sample are listed in tables 4 - 11.

Cell 43. The phenotype for this sample from a Hispanic donor is A*02:01-A*02:06-B*35:01:01G-B*35:17-C*04:01:01G-DRB1*04:04-DRB1*08:02-DRB4*01:01:01G-DQB1*03:02-DQB1*04:02-DPB1*04:02. The T-cell crossmatch for this cell was reported with good agreement as positive against serum samples 45 and 47. Against serum sample 48, it was reported as negative by all reporting labs. By contrast, no agreement was reached for this cell against serum 46, as 12 labs reported the T-cell crossmatch as negative and 4 reported it as positive. One lab reporting the crossmatch as positive, noted the positivity as weak. For the B-cell crossmatch, this cell was reported as positive against serum 45 - 47 and negative against serum 48. One lab reported the B-cell crossmatch against serum 45 as negative instead of positive and 1 lab reported the B-cell crossmatch against serum 47 as negative instead of positive. Two labs reported the B-cell crossmatch against serum 48 as positive instead of negative.

Cell 44. The phenotype for this sample from a Black donor is A*03:01-A*30:01-B*41:02-B*42:02-C*17:01:01G-DRB1*08:04-DRB1*15:03-DRB5*01:01-DQB1*03:01-DQB1*06:02-DPB1*04:02:01G-DPB1*105:01.
The T-cell crossmatch for this cell was reported as negative against serum samples 46 - 48. Two labs reported the T-cell crossmatch against serum 46 as positive instead of negative and 1 reported the crossmatch against serum 47 as positive instead of negative. Against serum 45, 13 labs reported the T-cell cross match as positive and 3 reported it as negative. One lab reporting the crossmatch as positive noted it as weak positive. For the B-cell crossmatch, the crossmatch was reported as positive against serum 45 and serum 46 in complete agreement. Against serum 48, the B-cell crossmatch was reported as negative by 13/15 labs. There was no agreement reached for the B-cell crossmatch against serum 47, as 9 labs reported the crossmatch as negative and 5 reported it as positive.

Table 2. Summary of Flow crossmatch results for Cell #043-#044 vs. Serum #045-#048

Cell no.	Serum no.	#Labs	T-cell Results	B-cell Results	Cell no.	Serum no.	#Labs	T-cell Results	B-cell Results
43	45	17	POS (17)	POS (15) *NEG (1)* NT (1)	44	45	17	POS (13) *NEG (3)* NT (1)	POS (14) NT (3)
43	46	17	NEG (12) POS (4) NT (1)	POS (16) NT (1)	44	46	17	NEG (14) *POS (2)* NT (1)	POS (15) NT (2)
43	47	17	POS (16) *NEG (1)*	POS (15) *NEG (1)* NT (1)	44	47	17	NEG (15) *POS (1)* NT (1)	NEG (9) POS (5) NT (3)
43	48	17	NEG (16) NT (1)	NEG (13) *POS (2)* NT (2)	44	48	17	NEG (16) NT (1)	NEG (13) *POS (2)* NT (2)

Antibody Identification

Class I and class II Luminex single antigen results for serum samples 45 - 48 are summarized in Tables 12 - 15 and individual results for each participating laboratory are listed in Tables 16 –23.

Serum 45 was previously examined as serum 41 (Exchange 7). In this present study, class I DSA were reported against cell 43 and cell 44. Strong anti-A2 reactivity was reported against cell 43, with medium MFI = 20842. Against cell 44, much weaker DSA were detected, with 10 labs reporting anti-B41 reactivity (2046). In the previous study, reactivity to B41 was reported with MFI = 2205. For class II, DSA were reported against cell 43 and cell 44. Five labs reported anti-DPw4 (4018) reactivity and another 5 reported reactivity to DP402 (4493) against each cell. Reactivity to DP402 was reported with similar MFI values (4386) in exchange 7. One lab reported additional anti-DR4 (1480) reactivity against cell 43 and anti-DR8 (2214) reactivity against cell 43 and cell 44.

Serum 46 was positive for class I DSA against cell 43. The class I reactivity was observed to be weak, with only 4 out 13 labs reporting anti-A2 (1000) reactivity against cell 43. No class I DSA were reported against cell 44. For class II, class II DSA were reported against cell 43 and 44. Anti-DR8 (7066) reactivity was reported against each of the cells by all 13 labs. No other class II DSA were detected.

For **serum 47**, class I reactivity was reported against cell 43. Anti-A2 reactivity against cell 43 was reported by all 13 labs, with MFI = 6534. Against cell 44, only 1 lab reported the presence of class I DSA, A30 (442) and B41 (1626). Class II DSA were reported against cell 43 and cell 44. Reactivity to DQ8 (4325) was reported by 11 labs against cell 43, while reactivity to DQ7 (5026) was reported against cell 44. One lab reported additional anti-DQ4 (1332) reactivity against cell 43.

Serum 48 was reported as positive for class I DSA against cell 44. Three labs reported anti-B42 reactivity against cell 44, however the strength of the antibody was weak (579), below the positive cut-off of most labs. No class I DSA were reported against cell 43. For class II, class II DSA were reported against cell 43 and cell 44. Anti-DR8 reactivity was reported against each cell, with medium MFI = 2383. Several labs reported additional weak anti-DR53 (1220) reactivity against serum 43 and additional anti-DR15 (1050) and anti-DR51 (1600) against serum 44.

Conclusion:

For the **T-cell flow crossmatch**, good agreement (>80%) was achieved for 7 out of the 8 T-cell crossmatches. Among the 7, 3 were reported in complete agreement. In the case of serum 45 against cell 43, in which all 17 labs reported the crossmatch as positive, strong class I DSA (A2) were present, with MFI = 20842. For serum 46 against cell 43, no agreement was reached, as 12 labs reported the T-cell crossmatch as negative and 4 reported it as positive. One lab reporting a positive crossmatch, noted the positivity as weak. Nine labs reported that no class I DSA were present against cell 43, 4 reported weak anti-A2 (1000) reactivity, and 1 lab noted serum 46 was class I negative. Two subtypes of A2 were present in cell 43, A*02:01 and A*02:06, however no labs reported any allele level reactivity.

For the **B-cell flow crossmatch**, 7 were reported with good agreement (>80%). Among the 7, 3 were reported in complete agreement, with moderate to strong (4200 - 7000) DSA present in each case. For the remaining crossmatch (serum 47 against cell 44), 9 labs reported it as negative and 5 reported it as positive. A number of labs (n=11) reported anti-DQ7 reactivity against cell 44, with MFI = 5026 ± 1272. No other class II DSA were present and no class I DSA were reported against cell 44 for serum 47. This suggests that the sensitivity of the B-cell flow crossmatch may be variable when class II DSA is moderate in strength and class I DSA is absent.

Part 3
Virtual Crossmatch Paper Challenge

Virtual crossmatch predictions for donor V1 - V4 against sera (patient) samples 47 and 48 are summarized in Table 3 and individual laboratory predictions are listed in Tables 24 - 31. Fictional donor histories precede each patient-donor summary.

For the virtual **T-cell crossmatch**, good agreement (>80%) was achieved for half the donor-patient pairs. In each case, the T-cell crossmatch was predicted as positive in the presence of moderate (3397±1317) to strong class I DSA (7600±2714). T-cell predictions for the remaining 4 crossmatches were variable, with a number of labs predicting borderline results. For serum 47 against donor V1, 9 labs predict the T-cell crossmatch to be positive, while 6 predict it to be negative. Among the negative predictions, 3 labs reported that no DSA were present. For serum 48 against donor V1, V3, and V4, 10 out of 15 predict the T-cell crossmatch to be negative, with the remainder of the labs either predicting positive or borderline results. Among the positive predictions, class I DSA with MFI <2000 were reported.

For the virtual **B-cell crossmatch**, 5 out of 8 predictions were reported with at least 80% agreement. For serum 47 against V1 - V3, 12 labs predict the B-cell crossmatch to be positive, while 3 predict it to be negative. Class I DSA were reported in each case, with MFI values ranging from 2400 to 6500. Class II DSA were reported with MFI values ranging from 1100 to 4324. Some labs however, reported no class II DSA were present. For serum 47 against donor V4 and serum 48 against V2, 13 labs predict the B-cell crossmatch to be positive and 2 predict it to be negative. Strong class I and/or class II DSA were present in each case. For the remaining 3 virtual crossmatches, predictions were mixed, as class I and class II DSA were reported as absent or weak (<2000).

Table 3. Summary of Virtual Crossmatch Exchange #008 results (Serum #047-#48 versus Donor #001 - #004)

Donor	Serum no.	#Labs	T-cell Prediction	B-cell Prediction	Predicted Risk Assessment	Donor	Serum no.	#Labs	T-cell Prediction	B-cell Prediction	Predicted Risk Assessment
V1	47	15	POS (9) NEG (6)	POS (12) NEG (3)	Unacceptable (12) Acceptable (3)	V2	47	15	POS (15)	POS (12) NEG (3)	Unacceptable (15)
V1	48	15	NEG (10) POS (4) Borderline (1)	NEG (11) POS (4)	Acceptable (10) Unacceptable (4) Undetermined (1)	V2	48	15	POS (15)	POS (13) NEG (2)	Unacceptable (15)

Donor	Serum no.	#Labs	T-cell Prediction	B-cell Prediction	Predicted Risk Assessment	Donor	Serum no.	#Labs	T-cell Prediction	B-cell Prediction	Predicted Risk Assessment
V3	47	15	POS (14) NEG (1)	POS (12) NEG (3)	Unacceptable (14) Acceptable (1)	V4	47	15	POS (13) NEG (2)	POS (13) NEG (2)	Unacceptable (14) Acceptable (1)
V3	48	15	NEG (10) POS (2) Borderline (3)	NEG (8) POS (6) Borderline (1)	Acceptable (8) Unacceptable (6) Undetermined (1)	V4	48	15	NEG (10) POS (3) Borderline (2)	NEG (10) POS (5)	Acceptable (10) Unacceptable (3) Undetermined (2)

██ < 80% agreement

With the exception of donor 2, crossmatch predictions were discordant overall among the patient-donor pairs, with the most variability observed for serum 48 against V1, V3, and V4. In each case, labs were mixed in the reporting of class I and class II DSA. Some labs reported the presence of weak class I and/or class II DSA and others reported that no DSA were present.

In line with the variability in crossmatch predictions, predicted renal transplant risk assessments were also observed to vary among labs. Five of the risk assessments were reported with > 80% agreement. Among the 5, only 2 were reported in complete agreement. No agreement was reached at all for 3 assessments. For Serum 48 against donor V1 and V4, 10 out of 15 labs assessed the risk as acceptable. The remainder of the labs accessed it as unacceptable or undetermined. For serum 48 against V3, assessments were almost split in half, with 8 labs accessing the transplant risk as acceptable, 6 predicting it as unacceptable, and 1 lab unable to predict the risk. In each case, labs reporting the presence of weak class I and/or class II DSA assessed the risk as unacceptable. Labs that reported no class I or class II DSA were present, assessed the risk as acceptable.

As with the variability in crossmatch and renal transplant predictions, the reporting of CPRA values were also observed to vary among labs. For serum 47, CPRA values ranged from 14% to 99%, with a number of labs (n=8) reporting values above 90%. Even more variability was observed for serum 48, in which 4 labs reported CPRA values of 7% and 4 labs reporting values above 80%.

Patient 1 (Serum #047):

History: Individual is a 38 year-old female being evaluated for her first transplant. The patient's HLA type is A3-B18-B35-Cw4-Cw7/DR15-DR1-DR51-DQ5-DQ6. The patient has had 1 prior pregnancy. The HLA type of the child is A3-A74-B18-B72-Cw7-Cw2/DR15-DR13-DR51-DR52-DQ6-DQ5.

For patient 1, the reporting of class I DSA were mixed among labs, as 9 labs reported anti-A68 (2442) reactivity and 3 labs noted that no DSA were present **against donor 1** (V1). Several labs noted that A*68:03 was not present on their single antigen bead panel, however other A*68 alleles (A*68:01 and A*68:03) were present. For class II, anti-DQ8 reactivity was reported against donor 1, with median MFI = 4325. For the virtual crossmatch, T-cell and B-cell predictions varied among labs. Six labs predict the T-cell crossmatch to be negative, 8 predict it to be positive. For B-cell predictions, 12 predict it to be positive, 2 predict it to be negative, and 1 predicts the crossmatch to be borderline negative. Risk assessment was predicted as unacceptable by 12 labs, 2 labs noted the risk as acceptable, and 1 noted the risk as moderate, with augmented immune suppression.

Against donor 2 (V2), multiple class I DSA (A11, A26) were reported, with respective MFI = 3397 and 7600. The reporting of class II DSA were mixed among labs, as 8 labs reported weak anti-DR52 (1124) reactivity, while 6 labs reported no DSA were present. Two labs noted DR52 as a previous pregnancy mismatch. Labs were in agreement for the virtual T-cell predictions, as all 15 labs predict it to be positive. For the B-cell crossmatch, 12 labs predict it to be positive and 3 predict it to be negative. All 15 labs assessed the risk as unacceptable.

Class I DSA (A2) were reported **against donor 3**, with median MFI = 6534. The reporting of class II DSA were mixed among labs, as anti-DR52 (1124) reactivity was reported by 7 labs and 7 labs reported no DSA were present. Two labs noted DR52 as being a previous pregnancy mismatch. T-cell predictions were reported as positive by all but 1 lab. B-cell predictions were mixed, with 11 labs predicting the crossmatch to be positive and 3 predicting it to be negative. Risk assessment was predicted as unacceptable by all but 1 lab, with the 1 lab noting the risk as moderate with augmented immune suppression.

Against donor 4, class I (A11) and class II (DQ7) DSA were reported, with respective MFI = 3397 and 5026. Virtual T-cell and B-cell predictions were reported as positive by 13 labs. Two labs predict the T-cell crossmatch to be negative, with 1 noting the results may be borderline. Two labs predict a negative B-cell crossmatch, with 1 lab once again noting borderline results. For transplant risk, 14 labs assessed the risk as unacceptable and 1 lab noted the risk as moderate with augmented immune suppression.

Patient 2 (Serum #048):

History: Individual is a 50 year-old male being evaluated for his second transplant. The patient's HLA type is A1-A25-B51-B62-Cw1-Cw9/DR1-DQ5. The HLA type of his first transplant is A1-A25-B62-B27-Cw2-Cw9/DR1-DQ5. DP typing of previous donor is unknown.

For patient 2, weak class I and class II DSA were reported **against donor 1**. Anti-B8 (1295) reactivity was reported by 6 labs and anti-DR52 (3146) reactivity was reported by 5 labs. The remainder of the labs reported no DSA and/or class II DSA were present. Virtual predictions were just as mixed, as 10 labs predict the T-cell crossmatch to be negative, 4 predict it to be positive, and 1 predicts borderline results. For the B-cell crossmatch, 11 labs predict it to be negative and 4 predict it to be positive, with 1 lab noting the positivity as weak. In turn, transplant risk was predicted as acceptable by the 8 labs predicting a negative B-cell and T-cell crossmatch and unacceptable by the 4 labs predicting a positive crossmatch. Several labs noted that an actual crossmatch was needed to determine the risk, as A*68:03 and B*39:05 are not present on the single antigen panel.

Against donor 2, anti-B27 reactivity was reported, with median MFI = 7276. Four labs noted B27 as a repeat mismatch. Mixed class II reactivity was reported against donor 2. Several labs reported multiple class II allele specific reactivity (DRB1*03;02, DRB1*13:01, DRB3*01:01, DRB3*02:02). Four labs reported anti-DR18 (1714) and/or anti-DR52 (3146) reactivity, 1 lab reported only anti-DR52 reactivity, and 4 labs reported no DSA were present. Good agreement was achieved for the virtual T-cell crossmatch, as all 15 labs predict the T-cell crossmatch to be positive. For the B-cell crossmatch, 13 labs predict it to be positive, while 2 predict it to be nega-tive. Transplant risk assessments were in line with predictions, with all 15 labs noting the risk as unacceptable.

The reporting of class I and class II DSA against **donor 3** was mixed among labs. For class I, 6 labs reported weak anti-B7 (1172) reactivity, while 5 labs reported no class I DSA were present. For class II, 7 labs reported anti-DR52 (3146) reactivity, while 6 reported no class II DSA were present. Ten labs predict the T-cell crosmatch to be negative, 2 predict it to be positive, and 3 predict it to be borderline. For the virtual B-cell predictions, the same variability in predictions is observed as in the virtual T-cell predictions, with 8 labs predicting it to be negative, 6 labs predicting it to be positive, and 1 predicting borderline results. Along with the variability in the crossmatch predictions, transplant risk assessments were also mixed among labs, with 8 labs predicting the risk as acceptable and 6 labs noting it as unacceptable.

Against donor 4, the reporting of class I DSA varied among labs, with 6 labs reporting weak anti-B48 (1488) reactivity and 6 labs reporting no class I DSA were present. The reporting of class II DSA were just as varia-ble. Six labs reported reactivity to DR52 (3146) against this donor, while 6 reported no class II DSA were present. As such, virtual predictions were mixed among labs. For virtual T-cell and B-cell predictions, 10 labs predict each to be negative, with the remainder of the labs predicting positive or borderline results. For transplant risk assessment, a similar pattern was observed. Ten labs assess the risk to be acceptable and 3 assess it to be unacceptable. Two labs were unable 2 access the risk, with 1 lab noting it may be acceptable with desensitization and the other noting a final cross-match was needed to determine the risk.

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Table 4. Individual Flow crossmatch results and DSA reported for Cell #043 vs. Serum #045

Center	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
23	45	10	256			POS	A2(17735)	40	244			POS	DP402(4200)	712	805	NO
206	45	2.98	351.2	34.93		POS	A2(20842)	4.94	410.65	32.96		POS	no DSA	10.35	12.85	YES
615	45	Tneg + 40	254			POS	NT	Bneg + 40	275			POS	NT	427	390	YES
774	45	50	321			POS	A2(23372)	100	296			POS	no DSA	276	362	NO
792	45	52	343			POS	A2(17445)	106	345			POS	DPw4(3641)	244	287	YES
836	45	70	219			POS	A2(21316)	135	178			POS	DPw4(3989), DR8(2214)	0	0	NO
1160	45	90	438			POS	A2(22136)	120	496			POS	DP402(4572)	304	262	YES
2400	45	40	335			POS	A2(23351)	80	251			POS	DPw4(9376)	197	413	NO
3224	45	70	324			POS	A2(19791)	140	313			POS	DP402(4493)	255	239	YES
3625	45	40 MCS	316			POS	A2(17773)	40 MCS	258			POS	DPw4(4018)	0.412	1.826	NO
3753	45	50	413			POS	A2(21944)	100	342			POS	DP402(4534)	244	334	NO
3966	45	20	262			POS	NT	40	344			POS	NT	190	227	NO
4345	45					POS	NT					NEG	NT			NO
4661	45	15	29.96			POS	A2(6723)	30	92.22			POS	DP402(1238)	14.99	29.43	YES
5219	45	1		37.5		POS	NT	1.2		145.6		POS	NT	0.64	0.44	NO
8001	45	50	371			POS	A2(23083)	100	397			POS	DPw4(6971)	281	317	YES
8096	45	50	284			POS	A2(9844)	NT				NT	no DSA	< 20	NT	NO

Table 5. Individual Flow crossmatch results and DSA reported for Cell #043 vs. Serum #046

Center	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
23	46	10	16			weak POS	A2(1458)	40	218			POS	DR8(4498)	712	805	NO
206	46	2.98	4.3	1.42		NEG	no specificities assigned	4.94	224.15	18.44		POS	DR8(8282)	10.35	12.85	YES
615	46	Tneg + 40	-43			NEG	NT	Bneg + 40	189			POS	NT	427	390	YES
774	46	50	14			NEG	no DSA	100	208			POS	DR8(7080)	276	362	NO
792	46	52	56			POS	A2(718)	106	279			POS	DR8(6194)	244	287	YES
836	46	70	29			NEG	A2(1118)	135	182			POS	DR8(7066)	0	0	NO
1160	46	90	<0			NEG	no DSA	120	375			POS	DR8(6059)	304	262	YES
2400	46	40	21			NEG	no DSA	80	193			POS	DR8(9762)	197	413	NO
3224	46	70				NEG	no DSA	140	224			POS	DR8(7724)	255	239	YES
3625	46	40 MCS	24			NEG	A2(882)	40 MCS	208			POS	DR8(3042)	0.412	1.826	NO
3753	46	50	20			NEG	no DSA	100	204			POS	DR8(8180)	244	334	NO
3966	46	20	32			POS	NT	40	255			POS	NT	190	227	NO
4345	46					NEG	NT					POS	NT			NO
4661	46	15	9.65			NEG	no DSA	30	106.5			POS	DR8(4057)	14.99	29.43	YES
5219	46	1		1.7		U	NT	1.2		45.2		POS	NT	0.64	0.44	NO
8001	46	50	10			NEG	no DSA	100	259			POS	DR8(10802), DR4(1180)	281	317	YES
8096	46	50	1114			POS	class I negative	NT				NT	DR8(6035)	< 20	NT	NO

U = undefined

Table 6. Individual Flow crossmatch results and DSA reported for Cell #043 vs. Serum #047

Center	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
23	47	10	47			POS	A2(6534)	40	83			POS	DQ8(2506)	712	805	NO
206	47	2.98	24.4	3.36		POS	A2(6210)	4.94	61.5	5.79		POS	DQ8(4325)	10.35	12.85	YES
615	47	Tneg + 40	45			POS	NT	Bneg + 40	99			POS	NT	427	390	YES
774	47	50	125			POS	A2(7142)	100	136			POS	DQ8(4901)	276	362	NO
792	47	52	139			POS	A2(5182)	106	179			POS	DQ8(3694)	244	287	YES
836	47	70	87			POS	A2(8873)	135	81			NEG	DQ8(4405)	0	0	NO
1160	47	90	189			POS	A2(7412)	120	285			POS	DQ8(4410)	304	262	YES
2400	47	40	136			POS	A2(8785)	80	88			POS	DQ8(3321)	197	413	NO
3224	47	70	59			POS	A2(8408)	140	99			POS	DQ8(4553)	255	239	YES
3625	47	40 MCS	71			POS	A2(4623)	40 MCS	73			POS	no specificities assigned	0.412	1.826	NO
3753	47	50	138			POS	A2(6242)	100	125			POS	DQ8(3626)	244	334	NO
3966	47	20	112			POS	NT	40	218			POS	NT	190	227	NO
4345	47					POS	NT					POS	NT			NO
4661	47	15	8.9			NEG	A2(2109)	30	48.7			POS	DQ8(3538), DQ4(1332)	14.99	29.43	YES
5219	47	1		4.02		POS	NT	1.2		15.11		POS	NT	0.64	0.44	NO
8001	47	50	142			POS	A2(10128)	100	193			POS	DQ8(7982)	281	317	YES
8096	47	50	914			POS	A2(2255)	NT				NT	no DSA	< 20	NT	NO

Table 7. Individual Flow crossmatch results and DSA reported for Cell #043 vs. Serum #048

Center	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
23	48	10	0			NEG	no DSA	40	0			NEG	DR8(1803)	712	805	NO
206	48	2.98	1.35	1.13		NEG	no DSA	4.94	2.8	1.22		NEG	no DSA	10.35	12.85	YES
615	48	Tneg + 40				No result	NT	Bneg + 40				No result	NT	427	390	YES
774	48	50	6			NEG	no DSA	100	10			NEG	DR8(3973), DR53(2050)	276	362	NO
792	48	52	12			NEG	no DSA	106	13			NEG	DR8(1765), DQ4(1027), DR53(918), DR4(683)	244	287	YES
836	48	70	27			NEG	no DSA	135	23			NEG	DR8(2383), DR53(1220), DQ4(1383)	0	0	NO
1160	48	90	<0			NEG	no DSA	120	<0			NEG	no DSA	304	262	YES
2400	48	40	6			NEG	no DSA	80	1			NEG	DR8(3467)	197	413	NO
3224	48	70				NEG	no DSA	140				NEG	DR8(2208)	255	239	YES
3625	48	40 MCS	9			NEG	no DSA	40 MCS	0			NEG	DQ8(3026)	0.412	1.826	NO
3753	48	50	7			NEG	no DSA	100	19			NEG	class II neg	244	334	NO
3966	48	20	12			NEG	NT	40	95			POS	NT	190	227	NO
4345	48					NEG	NT					POS	NT			NO
4661	48	15	9.82			NEG	no DSA	30	24.58			NEG	class II neg	14.99	29.43	YES
5219	48	1		0.94		NEG	NT	1.2		0.86		NEG	NT	0.64	0.44	NO
8001	48	50	-20			NEG	no DSA	100	12			NEG	no specificities assigned	281	317	YES
8096	48	50	60			NEG	no DSA	NT				NT	class II neg	< 20	NT	NO

Table 8. Individual Flow crossmatch results and DSA reported for Cell #044 vs. Serum #045

Center	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
23	45	10	22			weak POS	B41(1474)	40	64			POS	DP402(4200)	715	893	NO
206	45	2.98	11.3	2.07		NEG	no DSA	4.94	106.65	6.66		POS	no DSA	10.6	18.85	YES
615	45	Tneg + 40	4			NEG	NT	Bneg + 40	111			POS	NT	425	468	YES
774	45	50	75			POS	B41(2534)	100	182			POS	no DSA	258	385	NO
792	45	52	98			POS	B41(1458)	106	188			POS	DPw4(3641)	239	338	YES
836	45	70	67			U	B41(1871), B*41:02 (1399)	135	116			U	DPw4(3989), DR8(2214)	0	0	NO
1160	45	90	120			POS	B41(1799)	120	243			POS	DP402(4572)	223	327	YES
2400	45	40	73			POS	B41(3234)	80	207			POS	DPw4(9376)	163	413	NO
3224	45	70	51			POS	B41(2220)	140	141			POS	DP402(4493)	255	239	YES
3625	45	40 MCS	50			POS	B41(1699)	40 MCS	114			POS	DPw4(4018)	0.418	0.946	YES
3753	45	50	65			POS	B41(2563)	100	118			POS	DP402(4534)	226	374	NO
3966	45	20	39			POS	NT	40	218			POS	NT	192	286	NO
4345	45					NEG	NT					POS	NT			NO
4661	45	15	396			POS	no DSA	30	417.92			POS	DP402(1238)	18.6	22.07	YES
5219	45	1		2.19		POS	NT	1.2				U	NT	0.4	0.41	NO
8001	45	50	99			POS	B41(2771)	100	191			POS	DPw4(6971)	260	358	YES
8096	45	50	241			POS	no DSA	NT				NT	no DSA	< 20	Not Tested	NO

Same as virtual donor #004 and Serum 41 from Virtual Crossmatch Exchange #008

U = undefined

Table 9. Individual Flow crossmatch results and DSA reported for Cell #044 vs. Serum #046

Center	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
23	46	10	0			NEG	no DSA	40	155			POS	DR8(4498)	715	893	NO
206	46	2.98	-0.27	0.97		NEG	no specificities assigned	4.94	154.15	9.18		POS	DR8(8282)	10.6	18.85	YES
615	46	Tneg + 40	-25			NEG	NT	Bneg + 40	144			POS	NT	425	468	YES
774	46	50	17			NEG	no DSA	100	223			POS	DR8(7080)	258	385	NO
792	46	52	59			POS	no DSA	106	211			POS	DR8(6194), DR4(535)	239	338	YES
836	46	70	10			NEG	no DSA	135	147			POS	DR8(7066)	0	0	NO
1160	46	90	<0			NEG	no DSA	120	309			POS	DR8(6059)	223	327	YES
2400	46	40	38			NEG	no DSA	80	196			POS	DR8(9762)	163	413	NO
3224	46	70				NEG	no DSA	140	202			POS	DR8(7724)	255	239	YES
3625	46	40 MCS	4			NEG	no DSA	40 MCS	177			POS	DR8(3042)	0.418	0.946	YES
3753	46	50	20			NEG	no DSA	100	165			POS	DR8(8180)	226	374	NO
3966	46	20	3			NEG	NT	40	255			POS	NT	192	286	NO
4345	46					NEG	NT					POS	NT			NO
4661	46	15	17.47			NEG	no specificities assigned	30	102.74			POS	DR8(4057)	18.6	22.07	YES
5219	46	1				U	NT	1.2				U	NT	0.4	0.41	NO
8001	46	50	-10			NEG	no DSA	100	215			POS	DR8(10802), DR4(1180)	260	358	YES
8096	46	50	301			POS	class I neg	NT				NT	DR8(6035)	< 20	Not Tested	NO

U = undefined

Table 10. Individual Flow crossmatch results and DSA reported for Cell #044 vs. Serum #047

Center	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
23	47	10	0			NEG	no DSA	40	0			NEG	DQ7(3491)	715	893	NO
206	47	2.98	0.7	1.07		NEG	no DSA	4.94	27.1	2.44		NEG	DQ7(5666)	10.6	18.85	YES
615	47	Tneg + 40	-35			NEG	NT	Bneg + 40				NT	NT	425	468	YES
774	47	50	8			NEG	no DSA	100	56			NEG	DQ7(5570)	258	385	NO
792	47	52	27			NEG	A30(442)	106	95			NEG	DQ7(4335)	239	338	YES
836	47	70	0			NEG	no DSA	135	1			NEG	DQ7(5063)	0	0	NO
1160	47	90	<0			NEG	no DSA	120	138			POS	DQ7(5026)	223	327	YES
2400	47	40	34			NEG	no DSA	80	55			NEG	DQ7(4535)	163	413	NO
3224	47	70				NEG	no DSA	140	29			POS	DQ7(5530)	255	239	YES
3625	47	40 MCS	0			NEG	no DSA	40 MCS	33			NEG	no specificities assigned	0.418	0.946	YES
3753	47	50	13			NEG	no DSA	100	44			NEG	DQ7(4716)	226	374	NO
3966	47	20	2			NEG	NT	40	186			POS	NT	192	286	NO
4345	47					NEG	NT					POS	NT			NO
4661	47	15	55.73			POS	no DSA	30	89.77			POS	DQ7(4682)	18.6	22.07	YES
5219	47	1				NT	NT	1.2				NT	NT	0.4	0.41	NO
8001	47	50	-4			NEG	no DSA	100	82			NEG	DQ7(8761)	260	358	YES
8096	47	50	52			NEG	no DSA	NT				NT	no DSA	< 20	Not Tested	NO

Table 11. Individual Flow crossmatch results and DSA reported for Cell #044 vs. Serum #048

Center	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
23	48	10	0			NEG	no DSA	40	0			NEG	DR8(1803)	715	893	NO
206	48	2.98	-0.4	0.96		NEG	no DSA	4.94	-3.45	0.82		NEG	no DSA	10.6	18.85	YES
615	48	Tneg + 40	-49			NEG	NT	Bneg + 40	-1			NEG	NT	425	468	YES
774	48	50	4			NEG	no DSA	100	39			NEG	DR8(3973), DR51(2373)	258	385	NO
792	48	52	9			NEG	B42(410)	106	-4			NEG	DR8(1765), DR15(746), DR51(1205)	239	338	YES
836	48	70	12			NEG	B42(1393)	135	0			NEG	DR8(2383), DR15(1050), DR51(1600)	0	0	NO
1160	48	90	<0			NEG	no DSA	120	<0			NEG	DR8(2519), DR15(1093)	223	327	YES
2400	48	40	22			NEG	no DSA	80	18			NEG	DR8(3467)	163	413	NO
3224	48	70				NEG	no DSA	140				NEG	DR8(2208)	255	239	YES
3625	48	40 MCS	0			NEG	B42(579)	40 MCS	0			NEG	DQ7(3128)	0.418	0.946	YES
3753	48	50	16			NEG	no DSA	100	17			NEG	class II neg	226	374	NO
3966	48	20	9			NEG	NT	40	151			POS	NT	192	286	NO
4345	48					NEG	NT					POS	NT			NO
4661	48	15	14.59			NEG	no DSA	30	25.48			NEG	class II neg	18.6	22.07	YES
5219	48	1				U	NT	1.2				U	NT	0.4	0.41	NO
8001	48	50	-37			NEG	no DSA	100	-23			NEG	no specificities assigned	260	358	YES
8096	48	50	25			NEG	no DSA	NT				NT	class II neg	< 20	Not Tested	NO

Table 12. Summary of Single Antigen results for Serum #045

Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
A2	13	100%	20842	18873	4981	6723	23372
A68	13	100%	20516	18371	4604	6720	22967
A69	13	100%	20546	18172	5598	5430	23403
B57	13	100%	6834	7006	2453	1131	11289
B58	12	92%	6434	6510	2155	1873	9944
B60	12	92%	3817	3861	856	2463	5733
Cw10	12	92%	12731	12158	3705	2265	16808
Cw9	12	92%	13642	12961	3942	1969	17271
B45	11	84%	1958	2183	1194	1200	5613
B50	11	84%	1939	2435	1693	1286	7536
B61	11	84%	2614	2611	475	1677	3375
B41	10	76%	2046	2162	568	1458	3234
B46	10	76%	2187	2086	405	1421	2947
B47	10	76%	1942	2023	508	1361	3234
B49	10	76%	1535	2613	3115	1026	11875
B48	9	69%	1668	1738	437	1172	2827
A33	8	61%	1412	1359	228	1097	1788
A34	8	61%	1322	1323	253	909	1801
B13	8	61%	1188	1985	2161	803	7678
B44	7	53%	1149	1250	283	831	1693
A31	4	30%	1090	980	216	609	1133
Cw1	4	30%	1063	1095	423	619	1635
Cw15	4	30%	1424	1594	862	646	2884
Cw8	4	30%	796	780	273	441	1088
A29	3	23%	834	2461	2597	423	6126
B37	3	23%	1500	2116	1096	1192	3656
A30	2	15%	516	515	119	397	634
A36	2	15%	451	451	91	360	542
B62	2	15%	2754	2753	1685	1069	4438
B8	2	15%	680	679	152	528	831
Cw14	2	15%	469	468	74	395	542
Cw16	2	15%	481	480	105	376	585
A203	1	7%	19221	19221	-	19221	19221
A24	1	7%	336	336	-	336	336
A2403	1	7%	653	653	-	653	653
A25	1	7%	6504	6504	-	6504	6504
A6602	1	7%	593	593	-	593	593

Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
DQ2	13	100%	7503	7225	2917	1020	12291
DR11	13	100%	5196	5315	2302	776	10273
DR13	13	100%	6194	6048	2415	713	11218
DR14	13	100%	4845	4766	2122	628	9717
DR17	13	100%	16684	16625	4216	5737	23641
DR18	13	100%	15815	15409	4138	4404	22542
DR52	12	92%	12616	11780	3351	4625	16433
DR7	12	92%	2439	2970	1673	462	6967
DP14	11	84%	6935	7353	2695	2094	13292
DP17	11	84%	6244	6672	2434	2166	11941
DPw3	11	84%	7641	7888	2972	2324	13617
DP18	10	76%	4087	4393	1730	996	7455
DP20	10	76%	7361	8222	2416	5940	14168
DP28	10	76%	3839	4078	1650	998	7239
DP9	10	76%	7011	7920	2275	5667	13219
DPw2	10	76%	4037	4312	1956	1315	9277
DPw6	10	76%	6925	7567	2202	5396	12112
DP10	9	69%	4532	5143	1637	3619	9074
DP11	9	69%	1361	1659	714	1091	3228
DP19	9	69%	1376	1745	965	1090	4255
DPw5	9	69%	1358	1668	775	1087	3494
DP13	8	61%	1211	1449	623	907	2825
DPw1	7	53%	1647	2122	1052	1286	4448
DP402	5	38%	4493	3807	1291	1238	4572
DPw4	5	38%	4018	5599	2239	3641	9376
DR12	1	7%	3203	3203	-	3203	3203
DR4	1	7%	1480	1480	-	1480	1480
DR8	1	7%	2214	2214	-	2214	2214

DSA present
Red = DSA against cell #043 only
Blue = DSA against cell #044 only
Green = DSA aginst cell #043 and #044

Table 13. Summary of Single Antigen results Serum #046

*** Serum 46 ***							
10 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
B8	10	100%	2565	2823	1182	1455	5807
A2	4	40%	1000	1044	278	718	1458
Cw15	2	20%	493	492	94	399	586

*** Serum 46 ***							
13 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
DR11	13	100%	6490	6349	1888	2497	9870
DR12	13	100%	5100	4906	1467	2077	7644
DR13	13	100%	11423	10487	3751	4566	16769
DR14	13	100%	11107	9932	3253	5063	16111
DR17	13	100%	13530	12375	3703	6259	18511
DR18	13	100%	12079	11356	3529	5545	17637
DR8	13	100%	7066	6828	2119	3042	10802
DR52	12	92%	6801	6711	1929	3698	10831
DR4	2	15%	858	857	323	535	1180
DPw5	1	7%	358	358	-	358	358
DQ2	1	7%	346	346	-	346	346
DR1404	1	7%	5581	5581	-	5581	5581

DSA present
Red = DSA against cell #043 only
Blue = DSA against cell #044 only
Green = DSA aginst cell #043 and #044

Table 14. Summary of Single Antigen results Serum #047

Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
*** Serum 47 ***							
13 typing Labs							
A2	13	100%	6534	6454	2347	2109	10128
A25	13	100%	12528	11429	3910	2892	17728
A26	13	100%	7600	6783	2714	1516	11799
A32	13	100%	5185	4624	2030	775	8452
B57	13	100%	16423	14616	5232	1956	20284
B58	13	100%	15414	13717	4982	566	18814
A29	12	92%	1981	2045	763	556	3418
A33	12	92%	2749	2714	864	662	3931
A34	12	92%	3152	3179	972	861	4593
A43	12	92%	4668	4690	1690	592	7169
A68	12	92%	2442	2507	818	848	3740
A74	12	92%	1627	1672	581	494	2729
A11	11	84%	3397	3311	1317	652	5590
A31	11	84%	2471	2448	753	1146	3683
A66	11	84%	6638	6330	2369	2912	11510
A69	10	76%	2003	2181	529	1403	2904
B63	10	76%	1826	1767	469	1012	2453
A6601	3	23%	4775	5409	2341	2912	8540
A6602	3	23%	1920	2152	1099	938	3599
A1101	2	15%	3188	3187	1043	2145	4230
A1102	2	15%	3472	3472	1025	2447	4497
B75	2	15%	799	799	477	322	1276
B77	2	15%	1285	1285	963	322	2248
A203	1	7%	7792	7792	-	7792	7792
A23	1	7%	597	597	-	597	597
A24	1	7%	494	494	-	494	494
A30	1	7%	442	442	-	442	442
A36	1	7%	483	483	-	483	483
B13	1	7%	1343	1343	-	1343	1343
B27	1	7%	3455	3455	-	3455	3455
B37	1	7%	865	865	-	865	865
B41	1	7%	1626	1626	-	1626	1626
B46	1	7%	1305	1305	-	1305	1305
B48	1	7%	1322	1322	-	1322	1322
B49	1	7%	889	889	-	889	889
B53	1	7%	1635	1635	-	1635	1635
B54	1	7%	1171	1171	-	1171	1171

Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
*** Serum 47 ***							
12 typing Labs							
DR7	12	100%	5327	4994	1810	2122	9195
DQ7	11	91%	5026	5215	1272	3491	8761
DQ8	11	91%	4325	4296	1334	2506	7982
DQ9	11	91%	4600	4702	1370	2808	8270
DR9	10	83%	1949	1959	791	752	3773
DR12	7	58%	1292	1378	612	449	2625
DR52	6	50%	1124	1174	514	483	2198
DP10	1	8%	335	335	-	335	335
DP13	1	8%	334	334	-	334	334
DP9	1	8%	300	300	-	300	300
DPw3	1	8%	327	327	-	327	327
DPw5	1	8%	301	301	-	301	301
DPw6	1	8%	330	330	-	330	330
DQ2	1	8%	812	812	-	812	812
DQ4	1	8%	1332	1332	-	1332	1332

DSA present
Red = DSA against cell #043 only
Blue = DSA against cell #044 only
Green = DSA aginst cell #043 and #044

Table 15. Summary of Single Antigen results Serum #048

*** Serum 48 ***							
13 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
B27	13	100%	7276	6807	2840	1011	11006
B38	7	53%	1107	1070	282	495	1410
B48	7	53%	1488	1417	387	576	1883
B7	7	53%	1172	1244	426	693	2155
B65	6	46%	1042	1068	164	870	1323
B8	6	46%	1295	1289	264	836	1686
B73	5	38%	990	968	128	801	1158
B81	5	38%	1670	1718	465	1076	2491
B64	4	30%	726	799	160	674	1071
B42	3	23%	579	794	429	410	1393
B59	3	23%	944	882	174	645	1057
B8101	3	23%	1968	1854	222	1544	2052
B8201	3	23%	1047	980	99	841	1054
Cw8	3	23%	534	774	505	312	1477
B2708	2	15%	3116	3115	508	2608	3623
B39	2	15%	778	778	222	556	1000
B55	2	15%	643	642	39	604	681
B60	2	15%	558	558	126	432	684
B67	2	15%	449	448	68	381	516
B72	2	15%	608	607	48	560	655
Cw9	2	15%	635	635	146	489	781
B13	1	7%	435	435	-	435	435
B46	1	7%	353	353	-	353	353
B47	1	7%	547	547	-	547	547
B56	1	7%	395	395	-	395	395
B61	1	7%	377	377	-	377	377
B71	1	7%	378	378	-	378	378
B82	1	7%	803	803	-	803	803
Cw10	1	7%	707	707	-	707	707

*** Serum 48 ***							
8 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
DR14	8	100%	3303	3393	1043	1760	5539
DR16	7	87%	2378	2376	853	1331	3836
DR18	7	87%	1714	1722	475	1142	2397
DR8	7	87%	2383	2588	772	1765	3973
DP10	6	75%	2780	2819	721	1956	4197
DP13	6	75%	1996	1951	425	1279	2604
DP19	6	75%	1606	1685	480	1166	2636
DP23	6	75%	1643	1669	414	1205	2454
DR52	6	75%	3146	3245	1444	845	5229
DR13	5	62%	1601	2002	767	1190	3343
DR9	5	62%	2090	2272	804	1305	3448
DP11	3	37%	1035	964	123	792	1066
DP28	3	37%	1510	1395	210	1101	1575
DPw3	3	37%	1008	921	132	734	1021
DPw5	3	37%	1245	1150	173	908	1298
DPw6	3	37%	1221	1223	224	951	1499
DR10	3	37%	1058	974	137	781	1084
DR15	3	37%	1050	963	154	746	1093
DR51	3	37%	1600	1726	485	1205	2373
DR53	3	37%	1220	1396	479	918	2050
DP20	2	25%	852	852	162	690	1014
DQ2	2	25%	966	966	130	836	1096
DQ4	2	25%	1205	1205	178	1027	1383
DP14	1	12%	709	709	-	709	709
DP15	1	12%	655	655	-	655	655
DP18	1	12%	489	489	-	489	489
DPw1	1	12%	468	468	-	468	468
DPw2	1	12%	598	598	-	598	598
DPw4	1	12%	599	599	-	599	599
DQ5	1	12%	330	330	-	330	330
DQ6	1	12%	428	428	-	428	428
DQ7	1	12%	3128	3128	-	3128	3128
DQ8	1	12%	3026	3026	-	3026	3026
DQ9	1	12%	2820	2820	-	2820	2820
DR1	1	12%	333	333	-	333	333
DR11	1	12%	556	556	-	556	556
DR12	1	12%	854	854	-	854	854

DSA present

Red = DSA against cell #043 only

Blue = DSA against cell #044 only

Green = DSA aginst cell #043 and #044

Table 16. Individual laboratory results for Serum #045 - class I by Luminex

Center	A2	A68	A69	B57	B58	B60	Cw10	Cw9	B45	B50	B61	B41	B46	B47	B49	B48	A33	A34	B13	B44	A31	Cw1	Cw15	Cw8	Other	Manufactuer
23	17735	17499	17399	6834	6239	2889	9973	11133	1206	1291	1677	1474	1739	1477	1137	1172	1438	1405			1112		2884			One Lambda
206	20842	20516	21147	9016	8244	4261	14630	15139																		One Lambda
774	23372	22452	22984	8105	7230	4181	14448	15369	2256	2185	2840	2534	2289	2168												One Lambda
792	17445	16549	16513	5103	4512	2967	10017	10817	1200	1286	1972	1458	1421	1361	1026	1309	1108	909	803	831	609	619	646	441	A29,Cw4,A24>	One Lambda
836	21316	20713	20546	6580	5718	3718	12511	13499	1531	1706	2443	1871	1700	1771	1423	1668	1395	1127	1027	1096			1005		B62,B4005	One Lambda
1160	22136	21018	21448	6680	6126	3676	12147	13204	1504	1614	2614	1799	1856	1710	1371	1662	1516	1377	1101	1149					B37	One Lambda
2400	23351	22967	23403	9762	9545	5733	16808	17203	2761	2988	3375	3234	2947	3234	2405	2827										One Lambda
3224	19791	19251	19388	8763	7515	3916	12950	13784	1958	1939	2823	2220	2188	2000	1647	1639	1428	1525	1269	1391	1133	1376		1005	A203	One Lambda
3625	17773	16080	17179	5529	4551	3464	10111	10896	1357	1426	2417	1699	2307	1883	1265	1800	1788	1267	1107	1040	1067	750	1842	587	A29,B37,B75>	One Lambda
3753	21944	20924	20983	7100	6629	4217	13760	15257	2257	2257	2446	2563	2186	2260	1953	1771			1480	1693						One Lambda
4661	6723	6720	5430	1131			2265	1969																		Lifecodes
8001	23083	22770	23103	11289	9944	4851	16277	17271	2370	2562	2951	2771	2236	2369	2034	1801	1097	1174	1415	1550		1635		1088		One Lambda
8096	9844	11374	6714	5186	1873	2463			5613	7536	3168				11875		1105	1801	7678						A29,B37,Cw6>	Lifecodes
Avg	18873	18372	18172	7006	6511	3861	12158	12962	2183	2435	2611	2162	2087	2023	2614	1739	1359	1323	1985	1250	980	1095	1594	780		
Std Dev	5184	4792	5827	2553	2251	894	3869	4117	1252	1776	498	598	427	536	3283	464	244	271	2311	305	249	489	995	315		
MFI %CV	27%	26%	32%	36%	35%	23%	32%	32%	57%	73%	19%	28%	20%	26%	126%	27%	18%	20%	116%	24%	25%	45%	62%	40%		

DSA present

Red = DSA against cell #043 only

Blue = DSA against cell #044 only

Green = DSA aginst cell #043 and #044

Table 17. Individual laboratory results for Serum #046 - class I by Luminex

Center	B8	A2	Cw15	Other	Manufactuer
23	2102	1458			One Lambda
206	no specificities assigned				One Lambda
774	2821				One Lambda
792	1883	718	399		One Lambda
836	2342	1118			One Lambda
1160	2147				One Lambda
2400	5807				One Lambda
3224	3042				One Lambda
3625	1455	882	586		One Lambda
3753	2788				One Lambda
4661	NEG				Lifecodes
8001	3845				One Lambda
8096	NEG				Lifecodes
Avg	2823	1044	493		
Std Dev	1245	321	132		
MFI %CV	44%	31%	27%		

DSA present
Red = DSA against cell #043 only
Blue = DSA against cell #044 only
Green = DSA aginst cell #043 and #044

Table 18. Individual laboratory results for Serum #047 - class I by Luminex

Center	A2	A25	A26	A32	B57	B58	A29	A33	A34	A43	A68	A74	A11	A31	A66	A69	B63	A6601	A6602	A1101	A1102	B75	B77	Other	Manufactuer
23	6534	11098	5381	3785	14203	13607	1635	2351	3077	4144	2264	1432	3342	2205	4524	2020	1911								One Lambda
206	6210	12929	7392	5198	16423	15414				4517			3458		7569										One Lambda
774	7142	13817	8063	5670	18490	17276	2144	2903	3227	5031	2598	1738	3572	2480	8392	1884									One Lambda
792	5182	9554	5734	3767	13136	12449	1720	2110	2567	3850	2204	1352	3058	1850	5543	1610	1265					322	322	A24,B62,A30>	One Lambda
836	8873	11702	7600	4616	16300	14902	1979	2542	3000	4638	2645	1515	3397	2172	6666	1985	1448								One Lambda
1160	7412	12528	7642	5185	17264	16296	2652	3320	3849	5471	3352	1962	4186	2932	7597	2501	1740								One Lambda
2400	8785	15510	9173	6556	19421	18279	2701	3414	4176	7169	3187	2251	4722	3090	6638	2849	2453								One Lambda
3224	8408	13734	9101	6157	16960	15703	2976	3729	4197	6167	3507	2396		3420		2874	2115	8540	3599	4230	4497			A203	One Lambda
3625	4623	8244	4918	2993	12725	11819	1580	1909	2209	3113	1987	1248		1483		1403	1012	4775	1920	2145	2447				One Lambda
3753	6242	13503	7669	5671	17766	17127	1983	2594	2957	4697	2285	1755	3093	2471	5190	1782	2181								One Lambda
4661	2109	2892	1516	775	1956	566	556	662	861	592	848	494	652		2912			2912	938						Lifecodes
8001	10128	17728	11799	8452	20284	18814	3418	3931	4593	6900	3740	2729	5590	3683	11510	2904	2270								One Lambda
8096	2255	5350	2197	1297	5081	6070	1200	3109	3444		1469	1192	1352	1146	3096		1282					1276	2248	Cw4,B60,B61>	Lifecodes
Avg	6454	11430	6783	4625	14616	13717	2045	2715	3180	4691	2507	1672	3311	2448	6331	2181	1768	5409	2152	3188	3472	799	1285		
Std Dev	2442	4070	2825	2113	5446	5185	797	903	1015	1765	854	607	1381	790	2485	557	494	2867	1346	1474	1450	675	1362		
MFI %CV	38%	36%	42%	46%	37%	38%	39%	33%	32%	38%	34%	36%	42%	32%	39%	26%	28%	53%	63%	46%	42%	84%	106%		

DSA present

Red = DSA against cell #043 only

Blue = DSA against cell #044 only

Green = DSA aginst cell #043 and #044

Table 19. Individual laboratory results for Serum #048 - class I by Luminex

Center	B27	B38	B48	B7	B65	B8	B73	B81	B64	B42	B59	B8101	B8201	Cw8	B2708	B39	B55	B60	B67	B72	Cw9	Other	Manufactuer
23	4901							1076															One Lambda
206	6968																						One Lambda
774	8602																						One Lambda
792	7250	1031	1294	971	915	1163	801	1498	754	410	645			312			604	432	381	560	489	B61,B13,B82,B56 >	One Lambda
836	8878	1244	1488	2155	1109	1354		1857		1393				1477		1000							One Lambda
1160	8361	1107	1446	1058				1670															One Lambda
2400	7601							2491															One Lambda
3224	9382	1298	1883	1284	1218	1465	1036					1968	1047		3623								One Lambda
3625	6095	911	1512	1172	974	1235	857		674	579	944	1544	841	534	2608		681	684	516	655	781	B47,Cw10	One Lambda
3753	7276																						One Lambda
4661	1163																						Lifecodes
8001	11006	1410	1722	1379	1323	1686	1158		1071		1057	2052	1054										One Lambda
8096	1011	495	576	693	870	836	990		697							556							Lifecodes
Avg	6807	1071	1417	1245	1068	1290	968	1718	799	794	882	1855	981	774	3116	778	643	558	449	608	635		
Std Dev	2956	305	418	460	179	289	143	520	184	526	213	272	121	619	718	314	54	178	95	67	206		
MFI %CV	43%	28%	29%	37%	17%	22%	15%	30%	23%	66%	24%	15%	12%	80%	23%	40%	8%	32%	21%	11%	33%		

DSA present
Red = DSA against cell #043 only
Blue = DSA against cell #044 only
Green = DSA aginst cell #043 and #044

Table 20. Individual laboratory results for Serum #045 - class II by Luminex

Center	DQ2	DR11	DR13	DR14	DR17	DR18	DR52	DR7	DP14	DP17	DPw3	DP18	DP20	DP28	DP9	DPw2	DPw6	DP10	DP11	DP19	DPw5	DP13	DPw1	DP402	Other	Manufactuer
23	3632	4298	4742	3678	15011	13446	7620	2294	6543	5552	6165	3591	6448	3411	6409	4189	5602	4284	1091	1095	1177			4200		One Lambda
206	5215	5301	7035	4977	18912	17634	9468																			One Lambda
774	9862	5311	6706	5888	18404	17375	12909	2499	7701	6719	8431		7819		7476		7369									One Lambda
792	6757	4136	5556	4241	14648	13607	10837	2152	5732	5107	6324	3615	5940	3317	5667	3012	5396	3619	1113	1090	1087	907	1286		DPw4	One Lambda
836	8802	5196	6678	5167	18777	16777	13624	2536	6998	6073	7641	4186	7114	3807	7008	3497	6641	4138	1192	1237	1170	1003	1497		DPw4,DR8>	One Lambda
1160	7503	5257	5633	4845	16684	15815	13138	2378	6791	6143	8089	5020	7608	4327	7013	4233	7122	4532	1343	1376	1358	1186	1663	4572		One Lambda
2400	10783	10273	11218	9717	23641	22542	15359	5759	13292	11941	13617	7455	14168	7239	13219	9277	12112	9074	3228	4255	3494	2825	4448		DPw4	One Lambda
3224	7589	4847	6194	5449	16640	15325	12322	2139	6935	6244	7255	4541	7101	3999	6920	3885	6758	4509	1410	1309	1441	1054		4493		One Lambda
3625	5901	3275	3292	2313	13933	13125	15490	2141	6705	6403	6379	3987	6730	3870	6490	4210	6118	4555	1361	1383	1210	1236	1521		DPw4	One Lambda
3753	5681	4886	6334	4708	19422	17785	9546	2826	7207	6837	7675	3601	8015	3303	7708	3838	7092	4637	1528	1541	1488	1285	1647	4534		One Lambda
4661	1020	776	713	628	5737	4404	4625	462	2094	2166	2324	996		998		1315								1238		Lifecodes
8001	12291	6251	9007	7063	20908	19440	16433	3492	10888	10207	12872	6947	11279	6518	11293	5665	11461	6939	2667	2427	2592	2098	2798		DPw4	One Lambda
8096	8900	9295	5528	3285	13416	13054		6967																	DR12	Lifecodes
Avg	7226	5316	6049	4766	16626	15410	11781	2970	7353	6672	7888	4394	8222	4079	7920	4312	7567	5143	1659	1746	1669	1449	2123	3807		
Std Dev	3036	2396	2514	2208	4388	4307	3500	1748	2826	2553	3117	1824	2546	1740	2398	2062	2321	1737	757	1023	822	666	1137	1444		
MFI %CV	42%	45%	42%	46%	26%	28%	30%	59%	38%	38%	40%	42%	31%	43%	30%	48%	31%	34%	46%	59%	49%	46%	54%	38%		

DSA present

Red = DSA against cell #043 only

Blue = DSA against cell #044 only

Green = DSA aginst cell #043 and #044

Table 21. Individual laboratory results for Serum #046 - class II by Luminex

Center	DR11	DR12	DR13	DR14	DR17	DR18	DR8	DR52	Other	Manufactuer
23	3881	3070	5739	5409	7947	6795	4489	3698		One Lambda
206	7220	5517	13002	11243	15449	13615	8282	7412		One Lambda
774	6846	5100	12158	11358	13751	12860	7080	7273		One Lambda
792	5670	4652	9923	10138	11553	10314	6194	5971		One Lambda
836	6330	5118	11423	11107	13574	12079	7066	6677		One Lambda
1160	5793	4608	10188	10247	12257	10977	6059	6358		One Lambda
2400	9145	7061	15621	13439	17219	16222	9762	9096		One Lambda
3224	7144	5842	12251	11861	13530	13043	7724	7482		One Lambda
3625	2497	2077	4566	5498	6259	5545	3042	4703		One Lambda
3753	6892	5545	12751	11252	14901	13320	8180	6925		One Lambda
4661	4770	3671	5807	6394	7974	8015	4057	4111	DR1404	Lifecodes
8001	9870	7644	16769	16111	18511	17637	10802	10831	DR4	One Lambda
8096	6490	3883	6136	5063	7955	7209	6035			Lifecodes
Avg	6350	4907	10487	9932	12375	11356	6829	6711		
Std Dev	1966	1527	3904	3386	3854	3673	2206	2015		
MFI %CV	31%	31%	37%	34%	31%	32%	32%	30%		

DSA present

Red = DSA against cell #043 only

Blue = DSA against cell #044 only

Green = DSA aginst cell #043 and #044

Table 22. Individual laboratory results for Serum #047 - class II by Luminex

Center	DR7	DQ7	DQ8	DQ9	DR9	DR12	DR52	Other	Manufactuer
23	3532	3491	2506	2808			1171		One Lambda
206	6342	5666	4325	5351					One Lambda
774	5323	5570	4901	5344	2415				One Lambda
792	4205	4335	3694	3792	1582	1100	947	DPW3,DPW5,DPW6,DP9 >	One Lambda
836	5330	5063	4405	4600	1929	1292	1152		One Lambda
1160	4542	5026	4410	4796	1774	1339	1095		One Lambda
2400	5993	4535	3321	4027	2158				One Lambda
3224	5440	5530	4553	5221	2277	1661		DRB3*03:01 (1205), DRB3*01:01(1353)	One Lambda
3625	no specificities assigned								One Lambda
3753	5551	4716	3626	4030	1969	1182		DRB3*01:01(1748)	One Lambda
4661	2122	4682	3538	3488	970	449	483	DQ2,DQ4	Lifecodes
8001	9195	8761	7982	8270	3773	2625	2198		One Lambda
8096	2364				752				Lifecodes
Avg	4995	5216	4296	4702	1960	1378	1174		
Std Dev	1891	1334	1399	1437	833	661	563		
MFI %CV	38%	26%	33%	31%	43%	48%	48%		

DSA present
Red = DSA against cell #043 only
Blue = DSA against cell #044 only
Green = DSA aginst cell #043 and #044

Table 23. Individual laboratory results for Serum #048 - class II by Luminex

Center	DR14	DR16	DR18	DR8	DP10	DP13	DP19	DP23	DR52	DR13	DR9	DP11	DP28	DPw3	DPw5	DPw6	DR10	DR15	DR51	DR53	DP20	DQ2	DQ4	Other	Manufactuer
23	1760	1331	1142	1803	1956	1279	1166	1205																	One Lambda
206	3910																								One Lambda
774	5539	3836	2307	3973					5229	3343	3448							2373	2050						One Lambda
792	2488	1756	1253	1765	2212	1617	1298	1264	2421	1190	1595	792	1101	734	908	951	781	746	1205	918	690	836	1027	DR1,DR4,DR11,DR17 >	One Lambda
836	3316	2378	1714	2383	2970	2096	1730	1724	3306	1541	2090	1035	1510	1008	1245	1221	1058	1050	1600	1220		1096	1383		One Lambda
1160	3289	2483	1942	2519	2991	2217	1803	1809		1601		1066	1575	1021	1298	1499	1084	1093			1014				One Lambda
2400	3823	3284	2397	3467	4197	2604	2636	2454	4683	2335	2925														One Lambda
3224	3025	1570	1304	2208	2590	1895	1481	1561	2986																One Lambda
3625									845		1305													DR7,DR12,DQ7,DQ8 >	One Lambda
3753	NEG																								One Lambda
4661	NEG																								Lifecodes
8001	no specificities assigned																								One Lambda
8096	NEG																								Lifecodes
Avg	3394	2377	1723	2588	2819	1951	1686	1670	3245	2002	2273	964	1395	921	1150	1224	974	963	1726	1396	852	966	1205		
Std Dev	1115	921	513	834	790	466	526	454	1582	858	899	150	257	162	212	274	168	189	594	586	229	184	252		
MFI %CV	33%	39%	30%	32%	28%	24%	31%	27%	49%	43%	40%	16%	18%	18%	18%	22%	17%	20%	34%	42%	27%	19%	21%		

DSA present
Red = DSA against cell #043 only
Blue = DSA against cell #044 only
Green = DSA aginst cell #043 and #044

Table 24. Individual Virtual crossmatch results for Serum #047 vs. Donor #001

Donor #001 - HLA genotype: A*30:02-A*68:03-B*08:01-B*39:05-C*07:01:01G-C*07:02:01G/DRB1*03:01-DRB1*04:07:01G-DRB3*02:02:01G-DRB4*01:01:01G-DQB1*02:01-DQB1*03:02-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	Additional Comments
23	MX-047		Weak Positive	A68(2300)	Positive	DR52(1180), DQ8(2500)	Acceptable	
206	MX-047	69	Negative	no DSA	Positive	DQ8(4325)	Unacceptable	
774	MX-047		Negative	no DSA	Positive	DQB1*03:02(4901)	Unacceptable	
792	MX-047	99	Positive	A68(2204)	Positive	DQB1*03:02(3694)	Unacceptable	No A*68:03 bead on panel but other A*68 beads are positive
836	MX-047	99	Positive		Positive		Unacceptable	DSA of MFI=1000 POS
1160	MX-047	94	Positive	A68(3352)	Positive	DQ8(4410)	Unacceptable	A*68:03 and B*39:05 not present on antibody panel. Recommend crossmatch since both alleles are not present on SAB panel.
2400	MX-047	95	Positive	A68(3187)	Positive	DQ8((3321)	Acceptable	C1q-Negative for A68 and DQ8
3224	MX-047	91	Positive	A68(3507)	Positive	DQ8(4553)	Unacceptable	
3753	MX-047	14	Negative	A68(2285)	Negative/ Borderline	DQ8(3626)	Acceptable-Moderate Risk	expect <2000MCS positive XM; proceed with augmented IS
3966	MX-047		Positive	A68(2623)	Positive	DQ8(4021), DR52(1604)	Unacceptable	DR52 previous pregancy mismatch
4661	MX-047	99	Positive	A*68:02(848)	Positive	DQB1*05:01/ DQB1*02:01(812), DQB1*03:01/ DQB1*03:02(3174)	Unacceptable	
8001	MX-047	99	Negative		Positive	DQB1*03:02(7982)	Unacceptable	A*68:03, B*39:05, C*07:01, DRB1*04:07 not included in LSAB panel. However, A*68:01(3740) & A*68:02(3082) are present which makes the T cell virtual xmatch Positive .
8050	MX-047	92	Negative	A68(1886)	Negative	DQ8(3302)	Unacceptable	Multiple DSAs
8083	MX-047	83	Negative	none	Positive	DQ8(4537)	Unacceptable	DSA with MFI>1000 were reported
8096	MX-047		Positive	A68(1469)	Negative	none	Unacceptable	

Table 25. Individual Virtual crossmatch results for Serum #047 vs. Donor #002

Donor #002 - HLA genotype: A*11:01-A*26:01-B*18:01:01G-B*27:05:02G-C*06:08-C*07:01:01G/DRB1*03:02-DRB1*13:01-DRB3*01:01-DRB3*02:02:01G-DQB1*04:02-DQB1*06:03-DPB1*01:01-DPB1*03:01:01G

Center	Patient	CPRA	Virtual T-cell Prediction	Class I DSA (MFI)	Virtual B-cell Prediction	Class II DSA (MFI)	Risk Assessment	Additional Comments
23	MX-047		Positive	A11(3300), A26(5400)	Positive	DR52(1180)	Unacceptable	
206	MX-047	69	Positive	A26(7392), A11(3458)	Negative	no DSA	Unacceptable	
774	MX-047		Positive	A11(3572), A26(8063)	Negative	no DSA	Unacceptable	
792	MX-047	99	Positive	A*26:01(5734), A*11:01(2644)	Positive	DRB3*01:01(947), DPB1*03:01(327)	Unacceptable	
836	MX-047	99	Positive		Positive		Unacceptable	DSA 1000 MFI = POS
1160	MX-047	94	Positive	A26(7642), A11(3634)	Positive	no DSA	Unacceptable	C*06:08 not present on antibody panel.
2400	MX-047	95	Positive	A11(4722), A26(9173)	Positive	no DSA	Unacceptable	
3224	MX-047	91	Positive	A26(9101), A11(4230)	Positive	DR52(1353)	Unacceptable	
3753	MX-047	14	Positive	A11(3093), A26(7669)	Positive	DRB3*0101(1748)	Unacceptable-High risk	3 DSA, DR52 allele possible repeat paternal antigen
3966	MX-047		Positive	A11(4175), A26(9083)	Positive	DR52(1604)	Unacceptable	DR52 previous pregnancy mismatch
4661	MX-047	99	Positive	A*11:01(618), A*26:01(1516)	Positive	DRB3*01:01(483), DQB1*04:01/ DQB1*04:02(1332)	Unacceptable	
8001	MX-047	99	Positive	A*11:01(4585), A*26:01(11799)	Positive	DRB3*01:01(2198)	Unacceptable	C*06:08, C*07:01 are not included in LSAB panel
8050	MX-047	92	Positive	A11(2610), A26(6873)	Positive	none	Unacceptable	
8083	MX-047	83	Positive	A26(7507), A11(3412)	Positive	DR52(1374)	Unacceptable	DSA with MFI>1000 were reported
8096	MX-047		Positive	A11(1352), A26(2197), B27(3455)	Negative	none	Unacceptable	

Table 26. Individual Virtual crossmatch results for Serum #047 vs. Donor #003

Donor #003 - HLA genotype: A*02:01-A*24:03-B*07:02-01G-B*40:01-C*03:04-C*07:02:01G/DRB1*13:02-DRB1*15:01-DRB3*03:01-DRB5*01:01-DQB1*06:02-DQB1*06:04-DPB1*04:01:01G-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	Additional Comments
23	MX-047		Positive	A2(6500)	Positive	DR52(1180)	Unacceptable	
206	MX-047	69	Positive	A2(6210)	Negative	no DSA	Unacceptable	
774	MX-047		Positive	A2(7142)	Negative	none	Unacceptable	
792	MX-047	99	Positive	A*02:01(5045), A*24:03(494)	Positive	DRB3*03:01(815)	Unacceptable	
836	MX-047	99	Positive		Positive		Unacceptable	DSA of 1000 MFI = POS
1160	MX-047	94	Positive	A2(7343)	Positive	none	Unacceptable	
2400	MX-047	95	Positive	A2(8785)	Positive	none	Unacceptable	
3224	MX-047	91	Positive	A2(8408)	Positive	DR52(1205)	Unacceptable	
3753	MX-047	14	Positive	A2(6242)	Positive	none	Acceptable-Moderate Risk	expect <200MCS positive XM; proceed with augemented IS
3966	MX-047		Positive	A2(7712)	Positive	DR52(1604)	Unacceptable	DR52 previous pregnancy mismatch
4661	MX-047	99	Negative		Weak Positive	DRB3*03:01(302)	Unacceptable	DR52-repeat MM?
8001	MX-047	99	Positive	A*02:01(10128), A*24:03(667)	Positive	DRB3*03:01(1922)	Unacceptable	DRB1*13:02 is not included in LSAB panel
8050	MX-047	92	Positive	A2(5897)	Positive	none	Unacceptable	
8083	MX-047	83	Positive	A2(6408)	Positive	DR52(1122)	Unacceptable	DSA with MFI>1000 were reported
8096	MX-047		Positive	A2(2255), B60(1591)	Negative	none	Unacceptable	

Table 27. Individual Virtual crossmatch results for Serum #047 vs. Donor #004

Donor #004 - HLA genotype: A*11:01-A*24:02-B*40:10-B*48:01-C*04:03-C*08:01:01G/DRB1*11:01-DRB1*15:02-DRB3*02:02:01G-DRB5*01:01-DQB1*03:01-DQB1*05:02-DPB1*01:01:01G-DPB1*03:01:01G

Center	Patient	CPRA	Virtual T-cell Prediction	Class I DSA (MFI)	Virtual B-cell Prediction	Class II DSA (MFI)	Risk Assessment	Additional Comments
23	MX-047		Positive	A11(3300)	Positive	DR52(1180), DQ7(3500)	Unacceptable	
206	MX-047	69	Positive	A11(3458)	Positive	DQ7(5666)	Unacceptable	
774	MX-047		Positive	A11(3572)	Positive	DQB1*03:01(5570)	Unacceptable	
792	MX-047	99	Positive	A*11:01(2644), A*24:02(315)	Positive	DQB1*03:01(4335), DPB1*03:01(327)	Unacceptable	
836	MX-047	99	Positive		Positive		Unacceptable	DSA of 1000 MFI = POS
1160	MX-047	94	Positive	A11(3634)	Positive	DQ7(5026)	Unacceptable	B*40:10 not present on antibody panel.
2400	MX-047	95	Positive	A11(4722)	Positive	DQ7(4535)	Unacceptable	
3224	MX-047	91	Positive	A11(4230)	Positive	DQ7(5530)	Unacceptable	
3753	MX-047	14	Negative/ Borderline	A11(3093)	Negative/ Borderline	DQ7(4716)	Acceptable-Moderate Risk	expect <200MCS positive XM; proceed with augmented IS
3966	MX-047		Positive	A11(4175)	Positive	DQ7(5432), DR52(1604)	Unacceptable	DR52 previous pregnancy mismatch
4661	MX-047	99	Positive	A*11:01(618)	Positive	DQB1*05:01/ DQB1*03:01(4682)	Unacceptable	
8001	MX-047	99	Positive	A*11:01(4585)	Positive	DQB1*03:01(8761)	Unacceptable	B*40:10, C*04:03 are included in LSAB panel
8050	MX-047	92	Negative	A11(2610)	Positive	DQ7(4477)	Unacceptable	Multiple DSAs
8083	MX-047	83	Positive	A11(3412)	Positive	DQ7(5254)	Unacceptable	DSA with MFI>1000 were reported
8096	MX-047		Positive	A11(1352), B48(1322), B60(1591), Cw4(1688)	Negative	none	Unacceptable	

Table 28. Individual Virtual crossmatch results for Serum #048 vs. Donor #001

Donor #001 - HLA genotype: A*30:02-A*68:03-B*08:01-B*39:05-C*07:01:01G-C*07:02:01G/DRB1*03:01-DRB1*04:07:01G-DRB3*02:02:01G-DRB4*01:01:01G-DQB1*02:01-DQB1*03:02-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	Additional Comments
23	MX-048		Negative	no DSA	Negative	no DSA	Acceptable	
206	MX-048	13	Negative	no DSA	Negative	no DSA	Acceptable	
774	MX-048		Negative	no DSA	Positive	DRB3*0202(2282)	Unacceptable	
792	MX-048	100	Weak Positive	B*08:01(1163)	Weak Positive	DRB3*02:02(1138), DRB4*01:01(918), DQB1*02:01(836), DPB1*04:02 (599), DRB1*03:01 (342)	Acceptable	Crossmatch could be <200 Channel shifts, may be acceptable with desenstization
836	MX-048	100	Positive		Positive		Unacceptable	DSA of MFI 1000 = POS
1160	MX-048	86	Negative	no DSA	Negative	no DSA	Acceptable	A*68:03 and B*39:05 not present on antibody panel. Recommend crossmatch since both alleles are not present on SAB panel.
2400	MX-048	74	Negative		Negative		Acceptable	
3224	MX-048	84	Negative	B8(1465)	Negative	DR52(1196)		A final crossmatch is needed to determine acceptability due to questionable antibody bindings detected by Luminex single antigen bead assay
3753	MX-048	7	Negative	no DSA	Negative	no DSA	Acceptable - Low Risk	
3966	MX-048		Positive	B8(1492)	Positive	DR52(1830)	Unacceptable	
4661	MX-048	7	Negative		Negative		Acceptable	
8001	MX-048	48	Negative/ Positive	B8(1686)	Negative	Ambiguous specificity	Acceptable	A*68:03,B*39:05,C*07:01,DRB1*04:07 are not included on LSAB panel. However, A*68:01, A*68:02, B*39:01, C*07:02DRB1*04:02,DRB1*04:05, DRB1*04:04, DRB1*04:01 are present and negative,DRB1*01:03 (1045) is also present. Decision for transplant will be based on live Flow crossmatch result.
8050	MX-048	7	Negative	no DSA	Negative	no DSA	Acceptable	
8083	MX-048	7	Negative	B8(1233)	Negative	DR52(1588), DR53(1390), DQ2(1216)	Acceptable	DSA with MFI >1000 were reported
8096	MX-048		Positive	B8(836), B39(556)	Negative	none	Unacceptable	

Table 29. Individual Virtual crossmatch results for Serum #048 vs. Donor #002

Donor #002 - HLA genotype: A*11:01-A*26:01-B*18:01:01G-B*27:05:02G-C*06:08-C*07:01:01G/DRB1*03:02-DRB1*13:01-DRB3*01:01-DRB3*02:02:01G-DQB1*04:02-DQB1*06:03-DPB1*01:01-DPB1*03:01:01G

Center	Patient	CPRA	Virtual T-cell Prediction	Class I DSA (MFI)	Virtual B-cell Prediction	Class II DSA (MFI)	Risk Assessment	Additional Comments
23	MX-048		Positive	B27(4900)	Positive	DR18(1100)	Unacceptable	
206	MX-048	13	Positive	B27(6968)	Negatve	no DSA	Unacceptable	
774	MX-048		Positive	B*27:05(8602)	Positive	DRB1*03:02(2307), DRB1*13:01(3343), DRB3*01:01(2042), DRB3*02:02(2282)	Unacceptable	
792	MX-048	100	Positive	B*27:05(7250)	Positive	DRB1*03:02(1253), DRB1*13:01(1190), DRB3*02:02(1138), DRB3*01:01(883), DPB1*01:01 (468), DPB1*03:01(465), DQB1*06:03 (372)	Unacceptable	RPT MM B27
836	MX-048	100	Positive		Positive		Unacceptable	DSA of 1000 MFI = POS
1160	MX-048	86	Positive	B27(8361)	Positive	Weak DR18(1942)	Unacceptable	C*06:08 not present on antibody panel.
2400	MX-048	74	Positive	A*27:05(10689)	Positive	DRB1*13:01(2335), DRB3*03:01(4683), DRB3*02:02(2089)	Unacceptable	
3224	MX-048	84	Positive	B27(9382)	Positive	DR18(1304), DR52(1196)	Unacceptable	
3753	MX-048	7	Positive	B27(7276)	Positive	no DSA	Unacceptable-High Risk	B27 is a repeat mismatch with the prior donor
3966	MX-048		Positive	B27(6860)	Positive	DR52(1830)	Unacceptable	B27 previous transplantation mismatch
4661	MX-048	7	Positive	B*27:05(1163)	Positive		Unacceptable	
8001	MX-048	48	Positive	B*27:05(11006)	Positive	Ambiguous specificity	Unacceptable	C*06:08, C*07:01 are not included in LSAB panel. B27 is also a previous donor antigen.
8050	MX-048	7	Positive	B27(4799)	Positive	no DSA	Unacceptable	
8083	MX-048	7	Positive	B27(8733)	Positive	DR18(1841), DR52(1588), DP3(1164)	Unacceptable	DSA with MFI >1000 were reported
8096	MX-048		Positive	B27(1011)	Negatve	none	Unacceptable	

Table 30. Individual Virtual crossmatch results for Serum #048 vs. Donor #003

Donor #003 - HLA genotype: A*02:01-A*24:03-B*07:02-01G-B*40:01-C*03:04-C*07:02:01G/DRB1*13:02-DRB1*15:01-DRB3*03:01-DRB5*01:01-DQB1*06:02-DQB1*06:04-DPB1*04:01:01G-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	Additional Comments
23	MX-048		Negative	none	Negative	none	Acceptable	
206	MX-048	13	Negative	no DSA	Negative	no DSA	Acceptable	
774	MX-048		Negative	none	Positive	DRB3*03:01(5229), DRB5*01:01(2372)	Unacceptable	
792	MX-048	100	Negative/ Weak Positive	B*07:02(971)	Weak Positive	DRB3*03:01(2421), DRB5*01:01(1205), DPB1*04:02(599), DQB1*06:02(405)	Acceptable	Crossmatch could be <200 Channel shifts, may be acceptable with desenstization
836	MX-048	100	Positive		Positive		Unacceptable	DSA of 1000 MFI = POS
1160	MX-048	86	Borderline Negative/ Weak Positive	B7(1058)	Borderline Negative/ Weak Positive	none	Acceptable	Risk assessment: Acceptable with close post-transplant monitoring.
2400	MX-048	74	Negative		Positive	DR13(2335), DQB3*03:01(4683)	Unacceptable	
3224	MX-048	84	Negative	B7(1284)	Negative	DR52(2986)		A final crossmatch is needed to determine acceptability due to questionable antibody bindings detected by Luminex single antigen bead assay
3753	MX-048	7	Negative	none	Negative	none	Acceptable-Low Risk	
3966	MX-048		Negative		Positive	DR52(1830), DR51(1450)	Unacceptable	
4661	MX-048	7	Negative		Negative		Acceptable	
8001	MX-048	48	Negative/ Positive	B*07:02(1379), B*40:01(774)	Positive	Possible DRB3*03:01(4106)	Unacceptable	DRB1*13:02 is not included in LSAB panel. However, DRB1*13:01(2162,), DRB1*13:03(588) are present. Decision for transplant will be based on live Flow crossmatch result.
8050	MX-048	7	Negative	none	Negative	none	Acceptable	
8083	MX-048	7	Negative	B7(1230)	Negative	DR52(3708), DR51(1793)	Acceptable	DSA with MFI >1000 were reported
8096	MX-048		Positive	B7(693)	Negative	none	Unacceptable	

Table 31. Individual Virtual crossmatch results for Serum #048 vs. Donor #004

Donor #004 - HLA genotype: A*11:01-A*24:02-B*40:10-B*48:01-C*04:03-C*08:01:01G/DRB1*11:01-DRB1*15:02-DRB3*02:02:01G-DRB5*01:01-DQB1*03:01-DQB1*05:02-DPB1*01:01:01G-DPB1*03:01:01G

Center	Patient	CPRA	Virtual T-cell Prediction	Class I DSA (MFI)	Virtual B-cell Prediction	Class II DSA (MFI)	Risk Assessment	Additional Comments
23	MX-048		Negative	no DSA	Negative	no DSA	Acceptable	
206	MX-048	13	Negative	no DSA	Negative	no DSA	Acceptable	
774	MX-048		Negative	no DSA	Positive	DRB3*02:02(2282), DRB5*01:01(2372)	Unacceptable	
792	MX-048	100	Weak Positive	B*48:01(1294), C*08:01(312)	Positive	DRB5*01:01(1205), DRB3*02:02(1138), DPB1*03:01(734), DRB1*15:02(517), DPB1*01:01(468), DRB1*11:01(458)	Unacceptable/ Acceptable	Crossmatch could be <200 Channel shifts, may be acceptable with desenstization
836	MX-048	100	Positive		Positive		Unacceptable	DSA of 1000 MFI = POS
1160	MX-048	86	Borderline Negative/ Weak Positive	B48(1446)	Positive/ Weak Positive	no DSA	Acceptable	B*40:10 not present on antibody panel. Risk assessment: Acceptable with close post-transplant monitoring.
2400	MX-048	74	Negative		Negative	DRB3*02:02(2089)	Acceptable	
3224	MX-048	84	Negative	B48(1883)	Negative	DR52(1196)		A final crossmatch is needed to determine acceptability due to questionable antibody bindings detected by Luminex single antigen bead assay
3753	MX-048	7	Negative	no DSA	Negative	no DSA	Acceptable-Low Risk	
3966	MX-048		Positive	B48(1968)	Positive	DR52(1830), DR51(1450)	Unacceptable	
4661	MX-048	7	Negative		Negative		Acceptable	
8001	MX-048	48	Negative/ Positive	B*48:01(1722)	Negative	Ambiguous specificity	Acceptable	C*04:03, B*40:10 not included in LSAB panel. Decision for transplant will be based on live Flow crossmatch result.
8050	MX-048	7	Negative	no DSA	Negative	no DSA	Acceptable	
8083	MX-048	7	Negative	B48(1434)	Negative	DR51(1793), DR52(1588), DP3(1164)	Acceptable	DSA with MFI >1000 were reported
8096	MX-048		Negative	no DSA	Negative	no DSA	Acceptable	