

Report of the 7th Flow and Virtual Crossmatch Exchange

June 15, 2016

Cells	37-38
Serum	39-42

For the 7th Flow Cross Match Exchange, 2 cells (**cell nos. 37 - 38**) and 4 sera (**serum nos. 39 - 42**) were examined. Virtual crossmatch predictions were performed on 2 of the sera (nos. 41 and 42) against 4

potential donors. In addition, labs were given the opportunity for the first time to perform the actual FXM on a virtual donor-patient pair (**Donor 3 vs. MX-033**) from a previous study.

Virtual Crossmatch vs. Actual Flow Cytometric Crossmatch

Serum (patient) MX-033 from Flow Crossmatch Exchange #006 (March, 2016) was re-examined as serum 40 in this present study. Fifteen laboratories performed the actual crossmatch on serum 40 against cell 37 (virtual donor 3 from Exchange #006). Individual flow crossmatch results for this cell-serum pair are summarized in Table 1a. T-cell crossmatch

results were reported as positive by all 15 labs, as the presence of strong class I DSA (B48) were detected. For the B-cell crossmatch, 14 labs reported it as positive. One lab did not report B-cell results. No class II DSA were reported.

Table 1a. Individual Actual Flow Crossmatch results and DSA reported for Cell #037 vs. Serum #040

Center	T Cell Pos cutoff	T Cell MCS	RATIO	T-Cell RESULT	Class I DSA(MFI)	Center	B Cell Pos cutoff	B-cell MCS	RATIO	B-Cell RESULT	Class II DSA(MFI)
23	10	327		POS	B48(19992), Cw8(4606), A68(1215)	23	40	211		POS	no specificities assigned
206	2.98	383.95	39.18	POS	B48(12853)	206	4.94	387.05	27.79	POS	no specificities assigned
774	50	249		POS	B48(21847)	774	100	242		POS	no specificities assigned
792	52	348		POS	B48(14209), Cw8(2055), A68(499)	792	106	286		POS	no DSA
836	70	294		POS	B48(16063), Cw8(9214)	836	135	159		POS	no DSA
1160	90	376		POS	B48(20080), Cw8(2236)	1160	120	383		POS	no DSA
2400	40	270		POS	B48(14677), Cw8(2849)	2400	80	101		POS	no DSA
3135	1,2	3604	3,1	POS	NT	3135				NT	NT
3224	70	323		POS	B48(14570), Cw8 (2425)	3224	140	287		POS	no specificities assigned
3625	40 MCS	390		POS	B48(17401), Cw8(2362)	3625	40 MCS	211		POS	no DSA
3753	50	363		POS	B48(19137), Cw8(2268)	3753	100	356		POS	no specificities assigned
3966	40	139		POS	NT	3966	100	154		POS	NT
4345				POS	NT	4345				POS	NT
5219	1		12.6	POS	NT	5219	1.2		10.4	POS	NT
8001	50	320		POS	B48(13290), Cw8(1829)	8001	100	339		POS	no specificities assigned

Table 1b. Summary of Actual Crossmatch results vs. Virtual Crossmatch

Actual Flow Crossmatch					Virtual Crossmatch					
Cell no.	Serum no.	#Labs	T-cell Results	B-cell Results	Cell no.	Donor	Serum no.	#Labs	T-cell Prediction	B-cell Prediction
37	40	15	Positive(15)	Positive(14) NT(1)	37	3	33	10	Pos (9) Neg (1)	Pos (6) Neg (4)
< 80% agreement										

A comparison of actual results versus virtual crossmatch results is summarized in Table 1b. A total of 10 labs submitted virtual crossmatch predictions for serum MX-033 versus donor 3 in Exchange #006. Among the 10 labs, 7 reported actual flow crossmatch (Table 1c).

For virtual T-cell predictions, 9 labs predicted the crossmatch for patient MX-033 against donor 3 to be positive and 1 predicted it to be negative, based on their single antigen results. The presence of strong

class I DSA (MFI>13792) were reported by participants at the time. For B-cell predictions, results were mixed among the 10 participating labs for patient MX-033 against donor 3 in the previous study. Six predicted the crossmatch to be positive, while 4 predicted it to be negative, despite the presence of strong class I DSA. No class II DSA were reported against donor 3.

Table 1c. Individual Actual Crossmatch results vs. Virtual Crossmatch results

Actual Flow Crossmatch Serum 40 vs. Cell 37					Virtual Crossmatch Patient MX-033 vs. Donor 3				
Center	T-Cell RESULT	Class I DSA(MFI)	B-Cell RESULT	Class II DSA(MFI)	Center	T-cell Prediction	Class I DSA (MFI)	B-cell Prediction	Class II DSA (MFI)
206	POS	B48(12853)	POS	no specificities assigned	206	POS	B48(13792)	Negative	no DSA
792	POS	B48(14209), Cw8(2055), A68(499)	POS	no DSA	792	POS	A*68:02(578), A*68:01(514), B*48:01(15514), C*08:01(2167)	Positive	no DSA
1160	POS	B48(20080), Cw8(2236)	POS	no DSA	1160	POS	B48(20168), Cw8(2047)	Positive	no DSA
2400	POS	B48(14677), Cw8(2849)	POS	no DSA	2400	POS	B48(19389), Cw8(2986)	Positive	no DSA
3224	POS	B48(14570), Cw8 (2425)	POS	no specificities assigned	3224	POS	A68, B48, Cw8	Positive	no DSA
3753	POS	B48(19137), Cw8(2268)	POS	no specificities assigned	3753	POS	A68(1788), B48(21389), Cw8(4041)	Positive	no DSA
3966	POS	NT	POS	NT	3966	POS	B48(19366)	Negative	no DSA

Overall, virtual T-cell predictions were observed to be consistent with actual flow crossmatch results among labs in the presence of strong DSA (class I DSA MFI > 12853). Virtual B-cell predictions were less consistent with actual results, as 4 labs predicted the crossmatch as negative, while actual results were reported as positive in complete agreement. The variability in the B-cell predictions may be due to the criteria used by individual labs for predicting B-cell crossmatch outcome.

The reporting of DSA and DSA strength was also consistent among

labs. For the virtual challenge, labs reported strong anti-B48 (18675) reactivity against donor 3 for sample MX-033. In addition, weak reactivity to A68 and Cw8 were reported. For the actual flow crossmatch, once again strong anti-B48 (16063) reactivity was reported for serum 40 (same as MX-033) against cell 37 (same as donor 3). Weak anti-Cw8 reactivity was also reported, however anti-A68 reactivity was only reported by 1 of the original 7 labs the second time around.

Flow Cytometric Crossmatch

Flow crossmatch results for cell 37 and cell 38 versus serum samples 39 – 42 are summarized on Table 2 and individual laboratory results, along

with reported DSA for each sera, are listed in Tables 4 - 11.

Cell 37. The phenotype for this sample from a Hispanic donor is A*68:01-A*68:02-B*48:01-B*53:01-C*04:01:01G-C*08:01:01G-DRB1*04:03-DRB1*13:02-DRB3*03:01-DRB4*01:01:01G-DQB1*03:02-DQB1*06:04-DPB1*04:01:01G-DPB1*04:02:01G. The flow T-cell crossmatch for this sample was reported in complete agreement as positive against serum samples #39 - #41. However, against serum 42, no agreement was achieved, as 10 labs reported the T-cell crossmatch as negative and 5 reported it as positive.

The flow B-cell crossmatch for this cell was reported as positive against all 4 sera. Only 1 discrepancy was observed, as 1 lab reported the crossmatch against serum 42 as negative instead of positive.

Cell 38. The phenotype for this sample from a Hispanic donor is A*02:01-A*24:02-B*27:05:02G-B*39:06-C*02:02-C*07:02:01G-DRB1*04:11-DRB1*11:04-DRB3*02:02:01G-DRB4*01:01:01G-DQB1*03:01-DQB1*03:02, DPB1*04:02. For the flow T-cell crossmatch, no discrepancies were reported for cell 38 against serum samples 39, 40, and 41; all 15 labs reported the T-cell crossmatch as positive. By contrast, labs were split in their findings for the T-cell crossmatch of this cell against serum 42, as 8 labs reported the crossmatch as negative and 6 reported it as positive.

For the flow B-cell crossmatch, all 4 were reported as positive for cell 38 against all 4 serum samples. There were no discrepancies observed among the B-cell crossmatches for this sample.

Table 2. Summary of Actual Flow Crossmatch results for Cell #037-#038 vs. Serum #039-#042

Cell no.	Serum no.	#Labs	T-cell Results	B-cell Results	Cell no.	Serum no.	#Labs	T-cell Results	B-cell Results
37	39	15	Positive(15)	Positive(14) NT(1)	38	39	15	Positive(15)	Positive(14) NT(1)
37	40	15	Positive(15)	Positive(14) NT(1)	38	40	15	Positive(15)	Positive(13) NT(2)
37	41	15	Positive(15)	Positive(14) NT(1)	38	41	15	Positive(15)	Positive(14) NT(1)
37	42	15	Negative(10) Positive(5)	Positive(11) Negative(1) NT(3)	38	42	15	Negative(8) Positive(6) NT(1)	Positive(14) NT(1)

Antibody Identification

Class I and class II Luminex single antigen results for serum samples 39 - 42 are summarized in Tables 12 - 15 and individual results for each

participating laboratory are listed in Tables 16 - 22.

For **Serum 39**, multiple class I DSA (donor specific antibodies) were detected against cell 37 and cell 38. Anti-B48, -A68, and -B53 reactivity was reported against cell 37, with respective median MFI values of 11297, 8609, and 5254. Against cell 38, strong anti-B27 (16550) reactivity was reported. Additional reactivity to A24 (6467), A2 (3952), Cw7(4617), and B39 (1953) was also reported against cell 38. No class II DSA were reported against either cell 37 or cell 38, as this sample was reported as negative for class II.

Serum 40 was found to be positive for class I DSA against cell 37 and cell 38. Strong anti-B48 (16063) reactivity was reported against cell 37. Additional weak anti-Cw8 (2362) reactivity was also reported against cell 37 by 9 labs. Against cell 38, reactivity to B27 (14395), Cw7 (8495), and A2 (5493) was reported. A number (n=8) of labs also reported weak anti-Cw2 (2704) reactivity against cell 38. No class II DSA were reported against either cell 37 or cell 38.

For **serum 41**, class I and class II DSA were reported against cell 37 and cell 38. Strong reactivity to A68 was reported against cell 37, with median MF=19527. Weak anti-B48 (1520) and -Cw8 (1232) reactivity was also reported against cell 37. Against cell 38, strong reactivity to A2 (20090) was reported. For class II, anti-DR52 (10490) reactivity was reported against cell 37 and cell 38. A few labs (n=4) also reported weak reactivity to DP402 (4386) against each cell. In addition, reactivity to DR13 (5721) was reported against cell 37, and reactivity to DR11 (4758) was reported against cell 38.

Serum 42, was found to be positive for class I and class II DSA against cell 37 and cell 38. Seven labs reported weak anti-B48 (1264) reactivity against cell 37. The same 7 labs reported weak anti-B27 (1463) reactivity against cell 38. By contrast, strong class II DSA (DQ8) were reported against each cell, with median MFI=17609. In addition, strong reactivity to DQ7 (19783) was reported against cell 38.

Conclusion:

For the **T-cell flow crossmatch**, 100% agreement was achieved for 6 out of 8 crossmatch pairs. In each case, either strong class I DSA (MFI > 14000) or multiple class I DSA of moderate strength were present. For serum 42 against cell 37, results were mixed, with 10 labs reporting the crossmatch as negative and 5 reporting it as positive. Among the 5 labs reporting a positive T-cell crossmatch, 1 noted the positivity as weak. Labs were also split in their reporting of class I DSA; 7 labs reported weak anti-B48 reactivity (MFI=1264±179), while 5 others reported no DSA were present. For serum 42 against cell 38, 8 labs reported the crossmatch as negative and 6 reported it as positive. Once again, 1 lab reported the

crossmatch as weak. A number of labs (n=7) reported the presence of weak class I DSA (B27), with MF=1463±284; 5 labs reported no class I DSA were present against cell 38. This suggests the sensitivity of the flow crossmatch may be variable when DSA strength is weak.

For the **B-cell flow crossmatch**, all 8 crossmatch pairs were reported with good agreement. In each case, strong class I/and or class II DSA were present. Only 1 discrepancy was observed among the 8 crossmatch pairs, as 1 lab reported the crossmatch for serum 42 against cell 37 as negative instead of positive despite the presence of strong class II DSA.

Virtual Crossmatch Paper Challenge

Virtual crossmatch predictions for donor #001 - #004 against serum (patient) samples MX041 - MX042 are summarized in Table 3 and

individual laboratory predictions are listed in Tables 23 - 30. Fictional donor histories precede each patient-donor summary.

For the virtual T-cell crossmatch, good agreement was achieved overall. Among the 8 donor-patient pairs, 4 were reported as positive, with no discrepancies. In each case, MFI values ranging from 7000 - 22000 were reported. For serum 41 against donor #004, no agreement was achieved as 6 labs predict T-cell crossmatch outcome to be negative, 4 predict it to be positive, and 2 predict the results to be borderline. Weak class I DSA (MFI=2128±900) was reported against donor #004.

For the virtual B-cell crossmatch, 6 out of 8 were reported with good agreement. Among the 6, 2 were reported with only a single discrepancy. For serum 42 versus donor #003, 9 labs predict B-cell crossmatch outcome

to be positive, 2 predict it to be negative, and 1 predicts it to be borderline negative. Class I DSA (A11), with MFI=5051±1183 were reported. Eight labs reported the presence of class II DSA (DP1 and DP5), with median MFI=2775 and 5688, respectively. Predictions for serum 41 versus donor #004 were also mixed, as 8 labs predict the B-cell crossmatch to be positive and 4 predict it to be negative. Weak class I (B41), and class II (DP402) DSA were reported against donor #004, with respective MFI=2205 and 4386. Good concordance was observed for positive crossmatch predictions when strong or multiple DSA were present. However, when DSA strength was weak, greater variability was observed in the crossmatch predictions.

Table 3. Summary of Virtual Crossmatch results for Serum #041-#42 versus Virtual 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	41	12	POS (10) NEG(2)	POS (12)	Unacceptable(12)	V2	41	12	POS (12)	POS (12)	Unacceptable (12)
V1	42	12	POS (12)	POS (12)	Unacceptable(12)	V2	42	12	POS (12)	POS (12)	Unacceptable(12)
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	41	12	NEG(11) POS(1)	NEG(11) POS(1)	Acceptable(11) Unacceptable(1)	V4	41	12	NEG(6) POS(4) Boderline(2)	POS(8) NEG(4)	Unacceptable(8) Acceptable(4)
V3	42	12	POS (11) Boderline(1)	POS(9) NEG(2) Borderline(1)	Unacceptable(11) Acceptable(1)	V4	42	12	POS (12)	POS (11) NEG(1)	Unacceptable(12)

< 80% agreement

For renal transplant risk assessment, good agreement was achieved overall. Five of the 8 assessments were reported with no discrepancies and 2 were reported with only a single discrepancy. In the presence of moderate or strong DSA, risk assessment was consistent among labs. For serum 41 versus donor #004, in which class I and class II DSA strength was reported as weak, 8 labs noted the risk assessment as unacceptable

and 4 noted it as acceptable.

In addition to variability in crossmatch predictions and risk assessment, variability was also observed in the reporting of CPRA values, which ranged from 85 to 98. Center practice with regards to determining risk assessment and cut off values for single antigen reporting may influence how CPRA values were calculated.

Patient 1 (Serum #041):

History: Individual is a 44 year-old male being evaluated for his second transplant. The patient's HLA type is A1-A24-B35-B7-Cw4-Cw7/DR1-DR15-DR51-DQ5-DQ6. The HLA typing of his first transplant was A2-A24-B7-B35-Cw7-Cw9/DR15-DR51-DQ6.

For patient 1, class I and class II DSA were reported against virtual **donor #001**. Anti-Cw9 (C*03:03) reactivity was reported with MFI values ranging from 7633 to 15558. Two labs noted Cw9 as being a repeat mismatch from patient 1's previous transplant. Weak reactivity to A31 (1276) was also reported by 2 labs. Multiple class II DSA (DR7, DR14, DR52, DQ2) were reported against donor #001, with respective median MFI values of 2645, 4585, 10490, and 5718. Virtual T-cell predictions for this donor-patient pair were reported as positive by 10 labs. Two labs predict the T-cell cross match to be negative. For the virtual B-cell crossmatch, labs were in complete agreement, with all 12 predicting the B-cell crossmatch outcome to be positive. For renal transplant risk, all 12 labs assessed the risk to be unacceptable from an immunological point of view.

Strong class I reactivity to A2(20090), B58(6579), and Cw10 (12394) were reported against virtual **donor #002**. Several labs noted A2 was a repeat mismatch from this patient's previous transplant. Class II DSA (DR17, DR18, DR52, DQ2) against this donor was also reported, with respective median MFI values of 16359, 14955, 10490, and 5718. Virtual T- and B-cell predictions were reported as positive in complete consensus for

this donor-patient pair. Risk assessment was noted as being unacceptable by all 12 labs.

Against virtual **donor #003**, 9 labs reported that no class I DSA were present. One lab reported anti-Cw7 (588) reactivity, noting that the low level of the DSA may result in a negative crossmatch. The reporting of class II DSA was mixed. Six labs reported no class II DSA were present against patient #003, while 4 labs reported reactivity to DP5 (1407) and DP1(1504). For the virtual T- and B-cell crossmatches, 11 labs predict each to be negative and 1 lab predicts each to be positive. For renal transplant risk assessment, 11 labs assessed the risk as acceptable and 1 noted it as unacceptable in line with predictions.

Weak anti-B41(2205) reactivity was reported against virtual donor **#004** by 8 labs. Two other labs reported that no class I DSA were present. Class II reactivity was also weak (<5000), with 10 labs reporting anti-DP4 (DP402) reactivity against donor #004. For the virtual T-cell crossmatch, predictions were mixed, with 6 labs predicting the T-cell crossmatch to be negative, 4 predicting it to be positive, and 2 predicting it to be borderline negative/positive. For virtual B-cell predictions, 8 labs predict the crossmatch to be positive, and 4 predict it to be negative. The variability in the B-cell predictions may be due to the presence of weak class II DSA (DP402) against virtual donor #004, median MFI = 4386. As with the T- and B-cell predictions, transplant risk assessments varied among labs, with 8 labs noting it as unacceptable and 4 noting it as acceptable.

Patient 2 (Serum #042):

History: Individual is a 26 year-old female being evaluated for her first transplant. The patient's HLA type is A2-A68-B44-B72-Cw2-CW5-DR1-DR13-DR52-DQ5-DQ6. Patient has had 1 prior pregnancy. The HLA type of the child is A68-A66-B42-B72-Cw2-Cw17/DR13-DR18-DR52-DQ4-DQ6.

For patient 2, multiple class I and class II DSA were reported against virtual **donor #001**. Class I reactivity included, anti-A1 (9558), -A31 (12702), and -B55(3131) reactivity. For class II, strong reactivity to DR7 (17861), as well as reactivity to DQ2 (3969), was reported. Weak anti-DP401 (1120) reactivity was also reported by several labs. Virtual T-cell and B-cell predictions were reported as positive in complete consensus. All 12 labs assessed the renal transplant risk for this donor-patient pair as unacceptable.

Against virtual **donor #002**, class I DSA (A36) was reported, with MFI=8038. For class II, reactivity to DQ4 (5458), DP1 (2775), and DQ2 (3969) was reported. A number of labs (n=4) also reported weak reactivity to DR18(924). Complete agreement was achieved for the Virtual T- and B-cell crossmatch predictions, as all 12 labs predict crossmatch outcome to be positive. For renal transplant risk assessment, labs were also in complete agreement, noting the risk to be unacceptable.

Class I DSA (A11) was reported against virtual **donor #003**, with median MFI=(4844). The reporting of class II DSA was mixed, with 3 labs noting no class II DSA were present and 8 labs reporting reactivity to DP1 (2775) and DP5 (5688). For the virtual T-cell crossmatch, 11 labs predict the crossmatch to be positive (1 weak positive) and 1 predicts it to be negative (borderline). Virtual B-cell predictions varied among labs, with 9 labs predicting the crossmatch to be positive, 2 predicting it to be negative, and 1 predicting the outcome to be borderline negative. All but 1 lab assessed the renal transplant risk as unacceptable. The 1 lab noting an acceptable risk commented that it was "acceptable with augmented immunosuppression depending on the patient's urgency for transplant."

Against virtual **donor #004**, multiple class I DSA (A3, A30, and B42) were reported, with respective MFI values of 5390, 16010, and 3309. For class II, strong reactivity to DQ7 (19783) was reported. Virtual T-cell predictions were reported in completed agreement as positive. For the virtual B-cell crossmatch, 11 labs predict it to be positive, while 1 lab predicts it to be negative. Transplant risk was assessed as unacceptable by all 12 labs.

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Table 4. Individual Actual Flow crossmatch results and DSA reported for Cell #037 vs. Serum #039

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	39	10	251			POS	B48(10887),	40	169			POS	assigned	738	864	NO
206	39	2.98	173.45	18.25		POS	A68(11372), B48(13722), B53(6735)	4.94	210.55	15.57		POS	no specificities assigned	10.06	14.45	YES
774	39	50	236			POS	A68(8328), B48(11297), B53(5382)	100	257			POS	no specificities assigned	245	327	NO
792	39	52	324			POS	B48(8706),	106	292			POS	no DSA	235	290	YES
836	39	70	216			POS	B48(12529),	135	142			POS	assigned	0	0	NO
1160	39	90	344			POS	A68(7280), B48(9743), B53(4522)	120	383			POS	no DSA	336	300	YES
2400	39	40	233			POS	A68(8374), B48(10792), B53(4600)	80	140			POS	no specificities assigned	267	444	NO
3135	39	1,2	1503	1,3		POS	NT					NT	NT	1181		NO
3224	39	70	313			POS	A68(10122), B48 (11852), B53(5734)	140	280			POS	no specificities assigned	255	239	YES
3625	39	40 MCS	334			POS	A68(5965), B48(8387), B53(3221)	40 MCS	188			POS	no specificities assigned	151	382	YES
3753	39	50	284			POS	B48(11576),	100	289			POS	assigned	241	246	YES
3966	39	40	87			POS	NT	100	110			POS	NT	176	250	NO
4345	39					POS	NT					POS	NT			NO
5219	39	1		14.6		POS	NT	1.2		25.4		POS	NT	0.329	0.349	NO
8001	39	50	296			POS	A68(9006), B48(11619), B53(5254)	100	328			POS	no specificities assigned	303	298	YES

Table 5. Individual Actual Flow crossmatch results and DSA reported for Cell #037 vs. Serum #040

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	40	10	327			POS	B48(19992), Cw8(4606), A68(1215)	40	211			POS	no specificities assigned	738	864	NO
206	40	2.98	383.95	39.18		POS	B48(12853)	4.94	387.05	27.79		POS	no specificities assigned	10.06	14.45	YES
774	40	50	249			POS	B48(21847)	100	242			POS	no specificities assigned	245	327	NO
792	40	52	348			POS	B48(14209), Cw8(2055), A68(499)	106	286			POS	no DSA	235	290	YES
836	40	70	294			POS	B48(16063), Cw8(9214)	135	159			POS	no DSA	0	0	NO
1160	40	90	376			POS	B48(20080), Cw8(2236)	120	383			POS	no DSA	336	300	YES
2400	40	40	270			POS	B48(14677), Cw8(2849)	80	101			POS	no DSA	267	444	NO
3135	40	1,2	3604	3,1		POS	NT					NT	NT	1181		NO
3224	40	70	323			POS	B48(14570), Cw8 (2425)	140	287			POS	no specificities assigned	255	239	YES
3625	40	40 MCS	390			POS	B48(17401), Cw8(2362)	40 MCS	211			POS	no DSA	151	382	YES
3753	40	50	363			POS	B48(19137), Cw8(2268)	100	356			POS	no specificities assigned	241	246	YES
3966	40	40	139			POS	NT	100	154			POS	NT	176	250	NO
4345	40					POS	NT					POS	NT			NO
5219	40	1		12.6		POS	NT	1.2		10.4		POS	NT	0.329	0.349	NO
8001	40	50	320			POS	B48(13290), Cw8(1829)	100	339			POS	no specificities assigned	303	298	YES

Cell 37 and serum 40 (same as patient MX033 and donor 3) from Flow Crossmatch Exchange #006

Table 6. Individual Actual Flow crossmatch results and DSA reported for Cell #037 vs. Serum #041

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	41	10	307			POS	A68(16986), B48(2167), Cw8(1247)	40	264			POS	DR13(5121), DR52(8339)	738	864	NO
206	41	2.98	349.95	35.8		POS	A68(19720)	4.94	615.05	43.56		POS	DR13(7621), DR52(9970)	10.06	14.45	YES
774	41	50	233			POS	A68(20620)	100	244			POS	DR13(4212), DR52(8935)	245	327	NO
792	41	52	355			POS	A68(16141), B48(1262), Cw8(474), Cw4(369)	106	357			POS	DR13(4974), DR52(11009)	235	290	YES
836	41	70	263			POS	A68(20135), B48(2107), Cw8(1232)	135	203			POS	DR13(7269), DR52(14681), DP402(4556)	0	0	NO
1160	41	90	405			POS	A68(18070), B48(1146)	120	487			POS	DR52(11038), DR13(3774), DP402(3472)	336	300	YES
2400	41	40	308			POS	A68(21992), B48(3476)	80	197			POS	DR13(7116), DR52(9690), DP402(4786)	267	444	NO
3135	41	1,2	2434	2,1		POS	NT					NT	NT	1181		NO
3224	41	70	345			POS	A68(20206), B48(1520)	140	362			POS	DR13(6427), DR52(13379)	255	239	YES
3625	41	40 MCS	349			POS	A68(14677), B48(865)	40 MCS	237			POS	DR13(3233), DR52(13501)	151	382	YES
3753	41	50	425			POS	A68(20722), B48(1714)	100	409			POS	DR13(6321), DR52(9058), DP402(4215)	241	246	YES
3966	41	40	132			POS	A68(11495)	100	161			POS	DR13(3588), DR52(5043)	176	250	NO
4345	41					POS	NT					POS	NT			NO
5219	41	1		11.2		POS	NT	1.2		7.3		POS	NT	0.329	0.349	NO
8001	41	50	316			POS	A68(19333)	100	404			POS	DR13(6976), DR52(13374)	303	298	YES

Table 7. Individual Actual Flow crossmatch results and DSA reported for Cell #037 vs. Serum #042

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	42	10	29			weak POS	B48(1487)	40	138			POS	DQ8(15143)	738	864	NO
206	42	2.98	12.15	2.21		NEG	no DSA	4.94	159.55	12.04		POS	DQ8(16789)	10.06	14.45	YES
774	42	50	35			NEG	no DSA	100	248			POS	DQ8(15539)	245	327	NO
792	42	52	75			POS	B48(913), Cw4(381)	106	256			POS	DQ8(17408)	235	290	YES
836	42	70				NT	B48(1340)	135				NT	DQ8(21029)	0	0	NO
1160	42	90	38			NEG	no DSA	120	305			POS	DQ8(21000)	336	300	YES
2400	42	40	-42			NEG	no DSA	80	48			NEG	DQ8(17758)	267	444	NO
3135	42	1,2	829	0,7		NEG	NT					NT	NT	1181		NO
3224	42	70	38			POS	B48(1173)	140	229			POS	DQ8(19959)	255	239	YES
3625	42	40 MCS	72			POS	B48(1140)	40 MCS	157			POS	DQ8(24081)	151	382	YES
3753	42	50	38			NEG	B48(1416)	100	240			POS	DQ8(17460)	241	246	YES
3966	42	40	1			NEG	no DSA	100	101			POS	DQ8(8881)	176	250	NO
4345	42					NEG	NT					POS	NT			NO
5219	42	1		0.97		NEG	NT	1.2				NT	NT	0.329	0.349	NO
8001	42	50	63			POS	B48(1264)	100	273			POS	DQ8(20551)	303	298	YES

Table 8. Individual Actual Flow crossmatch results and DSA reported for Cell #038 vs. Serum #039

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	39	10	139			POS	B27(14624), B39(2658)	40	146			POS	no specificities assigned	747	873	NO
206	39	2.98	113.35	11.64		POS	B27(17614)	4.94	325.65	16.62		POS	no specificities assigned	10.65	20.85	YES
774	39	50	343			POS	B27(16889), B39(2038)	100	299			POS	no specificities assigned	244	365	NO
792	39	52	272			POS	B27(13221), B39(1586)	106	234			POS	no DSA	231	334	YES
836	39	70	287			POS	B27(18723), B39(3026)	135	192			POS	no specificities assigned	0	0	NO
1160	39	90	290			POS	B27(15255), A24(6467), Cw7(3486), A2(2983), B39(1929)	120	330			POS	no DSA	225	295	YES
2400	39	40	307			POS	B27(15125)	80	213			POS	no specificities assigned	193	402	NO
3135	39	1,2	2179	1,7		POS	NT					NT	NT	1293		NO
3224	39	70	312			POS	B27(17980), B39(2267)	140	272			POS	no specificities assigned	255	239	YES
3625	39	40 MCS	286			POS	B27(12475), B39(1405)	40 MCS	162			POS	no specificities assigned	192	418	YES
3753	39	50	278			POS	B27(16550), B39(1918)	100	343			POS	no specificities assigned	261	299	YES
3966	39	40	121			POS	NT	100	115			POS	NT	168	254	NO
4345	39					POS	NT					POS	NT			NO
5219	39	1		26.3		POS	NT	1.2		36.7		POS	NT	0.346	0.356	NO
8001	39	50	326			POS	B27(17005), B39(1953)	100	350			POS	no specificities assigned	265	303	YES

Table 9. Individual Actual Flow crossmatch results and DSA reported for Cell #038 vs. Serum #040

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	40	10	154			POS	A2(6670), B27(13599), Cw2(3401)	40	190			POS	no specificities assigned	747	873	NO
206	40	2.98	129.35	13.15		POS	A2(6946), B27(15260)	4.94	424.15	21.34		POS	no specificities assigned	10.65	20.85	YES
774	40	50	316			POS	A2(5700), B27(15900)	100	291			POS	no specificities assigned	244	365	NO
792	40	52	274			POS	A2(3811), B27(11890), Cw2(1827)	106	234			POS	no DSA	231	334	YES
836	40	70	261			POS	A2(5832), B27(15408), Cw2(2992)	135	172			POS	no DSA	0	0	NO
1160	40	90	313			POS	A2(3670), B27(13214), Cw7(8338)	120	334			POS	no DSA	225	295	YES
2400	40	40	227			POS	A2(5493), B27(15285), Cw2(3363)	80	103			POS	no DSA	193	402	NO
3135	40	1,2	2399	1,9		POS	NT					NT	NT	1293		NO
3224	40	70	298			POS	A2(6107), B27(14820), Cw2(2415)	140	189			POS	no specificities assigned	255	239	YES
3625	40	40 MCS	296			POS	A2(3696), B27(10940), Cw2(2008)	40 MCS	194			POS	no DSA	192	418	YES
3753	40	50	258			POS	A2(4755), B27(14374), Cw2(3021)	100	317			POS	no specificities assigned	261	299	YES
3966	40	40	102			POS	NT	100	130			POS	NT	168	254	NO
4345	40					POS	NT					POS	NT			NO
5219	40	1		6.5		POS	NT	1.2				NT	NT	0.346	0.356	NO
8001	40	50	320			POS	A2(4880), B27(14395), Cw2(2185)	100	342			POS	no specificities assigned	265	303	YES

Table 10. Individual Actual Flow crossmatch results and DSA reported for Cell #038 vs. Serum #041

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	41	10	151			POS	A2(18328)	40	210			POS	DR52(8339), DR11(4523)	747	873	NO
206	41	2.98	113.85	11.69		POS	A2(20323)	4.94	453.15	22.73		POS	DR52(9970), DR11(5713)	10.65	20.85	YES
774	41	50	278			POS	A2(21865)	100	274			POS	DR52(8935), DR11(3798)	244	365	NO
792	41	52	268			POS	A2(17631), A24(400)	106	309			POS	DR52(11009), DR11(4608)	231	334	YES
836	41	70	260			POS	A2(19661)	135	211			POS	DR52(14681), DR11(5723), DP402(4556)	0	0	NO
1160	41	90	309			POS	A2(20018)	120	398			POS	DR52(11038), DR11(3615), DP402(3472)	225	295	YES
2400	41	40	269			POS	A2(21867)	80	167			POS	DR52(9690), DR11(5810), DP402(4786)	193	402	NO
3135	41	1,2	2236	1,7		POS	NT					NT	NT	1293		NO
3224	41	70	290			POS	A2(20440)	140	311			POS	DR52(13379), DR11(5168)	255	239	YES
3625	41	40 MCS	256			POS	A2(15561)	40 MCS	215			POS	DR52(13501), DR11(2980)	192	418	YES
3753	41	50	222			POS	A2(20639)	100	343			POS	DR52(9058), DR11(4908), DP402(4215)	261	299	YES
3966	41	40	118			POS	A2(12205)	100	161			POS	DR52(5043), DR11(2674)	168	254	NO
4345	41					POS	NT					POS	NT			NO
5219	41	1		8.5		POS	NT	1.2		5.8		POS	NT	0.346	0.356	NO
8001	41	50	291			POS	A2(20163)	100	380			POS	DR52(13374), DR11(5324)	265	303	YES

Table 11. Individual Actual Flow crossmatch results and DSA reported for Cell #038 vs. Serum #042

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	42	10	0			NEG	B27(2015)	40	215			POS	DQ7(17036), DQ8(15143)	747	873	NO
206	42	2.98	5.4	1.51		NEG	no DSA	4.94	534.65	26.64		POS	DQ7(19397), DQ8(16789)	10.65	20.85	YES
774	42	50	82			POS	no DSA	100	314			POS	DQ7(15695), DQ8(15539)	244	365	NO
792	42	52	47			NEG	B27(1028)	106	330			POS	DQ7(18597), DQ8(17408)	231	334	YES
836	42	70	62			NT	B27(1509)	135	211			POS	DQ7(21515), DQ8(21029)	0	0	NO
1160	42	90	16			NEG	no DSA	120	417			POS	DQ7(21474), DQ8(21000)	225	295	YES
2400	42	40	43			NEG	no DSA	80	155			POS	DQ7(20608), DQ8(17758)	193	402	NO
3135	42	1,2	1828	1,4		POS	NT					NT	NT	1293		NO
3224	42	70	11			POS	B27(1566)	140	302			POS	DQ7(21121), DQ8(19959)	255	239	YES
3625	42	40 MCS	56			POS	B27(1228)	40 MCS	229			POS	DQ7(18293), DQ8(24081)	192	418	YES
3753	42	50	35			NEG	B27(1414)	100	360			POS	DQ7(20168), DQ8(17460)	261	299	YES
3966	42	40	9			NEG	no DSA	100	175			POS	DQ7(10461), DQ8(8881)	168	254	NO
4345	42					NEG	NT					POS	NT			NO
5219	42	1		1.3		WEAK POS	NT	1.2		10.5		POS	NT	0.346	0.356	NO
8001	42	50	54			POS	B27(1463)	100	352			POS	DQ7(21248), DQ8(20551)	265	303	YES

Table 12. Summary of Single Antigen results for Serum #039

Class I							
*** Serum 39 ***							
11 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
A2	11	100%	3952	3873	782	2484	5190
A23	11	100%	6974	7275	1297	5131	9529
A24	11	100%	6467	6693	1302	4241	8824
A25	11	100%	7592	7729	1297	5260	10043
A26	11	100%	2622	2532	622	1351	3623
A32	11	100%	8614	8517	1484	6061	11278
A33	11	100%	6000	5891	1202	3793	8130
A34	11	100%	5780	5987	1164	3757	7552
A68	11	100%	8609	8639	1588	5965	11372
A69	11	100%	8022	7889	1482	5376	10726
B13	11	100%	13224	12577	1784	9191	15238
B27	11	100%	16550	15951	1892	12475	18723
B37	11	100%	7913	7773	1292	4997	9650
B38	11	100%	6032	6343	1876	3400	11180
B41	11	100%	4651	4736	719	3414	5685
B42	11	100%	7140	7161	1084	5465	8989
B44	11	100%	6356	6372	1117	4179	8030
B47	11	100%	12680	12261	1714	8818	14571
B48	11	100%	11297	11010	1508	8387	13722
B49	11	100%	6390	6310	1281	3557	8056
B51	11	100%	4755	4779	939	3069	6055
B52	11	100%	4454	4592	970	2883	6157
B53	11	100%	5254	5118	1007	3221	6735
B54	11	100%	3015	2973	625	1783	3833
B55	11	100%	5480	5555	1093	3403	7479
B56	11	100%	3448	3488	850	2107	5012
B57	11	100%	6971	6747	1188	4552	8401
B58	11	100%	6569	6337	1095	4457	8018
B59	11	100%	5690	5565	1051	3541	7048
B60	11	100%	12045	11717	1698	8308	14582
B61	11	100%	11866	11702	1719	8206	14089
B63	11	100%	4651	4665	1224	2473	7416
B67	11	100%	6656	6381	1240	3936	8403
B7	11	100%	15059	14795	1504	12091	16635
B73	11	100%	9528	8906	1578	5622	11363
B77	11	100%	4285	4362	835	2788	5515
B8	11	100%	2448	2522	550	1474	3488
CW7	10	91%	4617	4744	1030	3486	6886
B39	9	82%	1953	2086	475	1405	3026

Class II							
*** Serum 39 ***							
6 typing Lab							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
NEG	5	83%	-	-	-	-	-
DP10	1	17%	309	309	-	309	309
DPW6	1	17%	304	304	-	304	304

DSA present

Red = DSA against cell #037 only

Blue = DSA against cell #038 only

Green = DSA against cell #037 and #038

Table 13. Summary of Single Antigen results Serum #040

Class I							
*** Serum 40 ***							
11 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
A2	11	100%	5493	5232	1111	3670	6946
A29	11	100%	9779	10154	1310	8451	13006
A31	11	100%	12220	12248	1517	9627	15142
A32	11	100%	14319	14330	1593	11395	16546
A33	11	100%	10494	10439	1246	8472	13450
A74	11	100%	14527	14423	1623	11530	17207
B13	11	100%	12566	12625	1151	10626	14407
B27	11	100%	14395	14098	1486	10940	15900
B41	11	100%	15887	15969	1362	13147	17817
B42	11	100%	7583	7242	1487	5287	10756
B45	11	100%	8675	8714	1223	6563	10671
B46	11	100%	4204	4319	875	3141	5973
B47	11	100%	10962	11160	1192	8760	12686
B48	11	100%	16063	16738	2967	12853	21847
B49	11	100%	5317	5497	895	4210	6990
B50	11	100%	9013	8940	1177	6923	10984
B60	11	100%	16463	17176	3121	12940	22491
B61	11	100%	16266	16689	1523	14211	19900
B7	11	100%	15544	15337	1566	12245	17309
B73	11	100%	15601	15485	1549	12527	17240
B55	10	91%	2263	3179	2603	1645	10757
B8	10	91%	2096	2304	727	1531	4224
CW10	10	91%	12660	12775	1467	10182	15357
CW17	10	91%	5519	5536	1417	3477	8151
CW7	10	91%	8495	8501	1280	6605	10866
CW9	10	91%	12209	11614	1647	8990	13936
A30	9	82%	9345	9216	1146	7463	10930
B81	9	82%	16808	17334	2322	14235	21137
CW16	9	82%	7156	7612	1279	6003	10607
CW8	9	82%	2362	3316	2222	1829	9214
B67	8	73%	1246	1419	389	1069	2315
CW2	8	73%	2704	2651	580	1827	3401
A6602	6	55%	6872	6834	1066	5135	8347
CW1	6	55%	1204	1335	493	741	2054
A36	5	45%	1263	1310	394	917	2047
A66	5	45%	6537	6354	1657	3854	8180
B54	5	45%	1231	1342	486	716	2169
CW12	5	45%	1519	1989	782	1288	3192
CW14	5	45%	1316	1669	732	946	2983

Class II							
*** Serum 40 ***							
7 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
DQ2	4	57%	2219	2140	297	1681	2443
NEG	3	7%	-	-	-	-	-
DP13	1	7%	603	603	-	603	603
DP8	1	7%	310	310	-	310	310

DSA present

Red = DSA against cell #037 only

Blue = DSA against cell #038 only

Green = DSA against cell #037 and #038

Table 14. Summary of Single Antigen results Serum #041

Class I							
*** Serum 41 ***							
12 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
A2	12	100%	20090	19058	2678	12205	21867
A68	12	100%	19527	18341	2899	11495	21992
A69	12	100%	19596	18561	3005	11199	22091
B57	12	100%	7070	6976	1989	3870	10611
B58	12	100%	6579	6321	2012	3011	9963
B60	12	100%	3880	3810	1223	2143	6785
CW9	12	100%	13683	12796	2751	7633	16919
CW10	11	92%	12394	11666	2651	7273	16266
B41	10	83%	2205	2127	854	836	4084
B46	10	83%	1917	2036	798	1093	3871
B47	10	83%	1927	2025	864	909	4179
B50	10	83%	1979	1897	804	725	3844
B61	10	83%	2431	2539	784	1446	4321
B45	9	75%	1987	1911	720	746	3546
B48	9	75%	1520	1728	739	865	3476
A33	8	67%	1288	1624	749	687	2861
B49	8	67%	1675	1662	769	500	3368
B44	7	58%	1258	1466	584	882	2785
B13	6	50%	1397	1490	539	846	2606
A34	5	42%	1212	1180	392	543	1643
CW15	5	42%	1663	2264	1519	689	4987
CW1	3	25%	1102	1150	490	576	1774
CW8	3	25%	1232	984	361	474	1247
A203	2	17%	20266	20265	207	20059	20472
A29	2	17%	708	708	213	495	921
A31	2	17%	1275	1275	573	702	1848
B8	2	17%	988	987	377	611	1364
CW16	2	17%	726	725	281	445	1006
A210	1	8%	20497	20497	-	20497	20497
A24	1	8%	400	400	-	400	400
A30	1	8%	472	472	-	472	472
A36	1	8%	432	432	-	432	432
B37	1	8%	1395	1395	-	1395	1395
B4005	1	8%	2033	2033	-	2033	2033
CW14	1	8%	395	395	-	395	395
CW4	1	8%	369	369	-	369	369
CW7	1	8%	588	588	-	588	588

Class II							
*** Serum 41 ***							
12 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
DQ2	12	100%	5718	6282	1930	2963	10045
DR11	12	100%	4758	4570	1035	2674	5810
DR13	12	100%	5721	5551	1523	3223	7621
DR14	12	100%	4585	4496	1209	2450	6201
DR17	12	100%	16359	15713	3009	9881	19019
DR18	12	100%	14955	14569	2709	9249	17809
DR52	12	100%	10490	10668	2632	5043	14681
DP14	11	92%	6820	6495	1081	4117	7649
DP20	11	92%	6960	6660	1121	4425	7873
DP9	11	92%	7077	6624	1198	4442	8045
DPW3	11	92%	6577	6680	1208	4455	8184
DPW6	11	92%	5969	6085	923	4381	7423
DR7	11	92%	2645	2617	553	1549	3300
DP10	10	83%	4318	4210	688	2775	5131
DP17	10	83%	6046	5849	928	3850	6980
DP18	9	75%	3802	3945	536	3182	4682
DP28	9	75%	3651	3655	457	3056	4277
DPW2	9	75%	3835	3760	419	3104	4434
DP11	6	50%	1325	1294	183	945	1524
DP19	6	50%	1345	1330	80	1172	1424
DPW4	6	50%	3704	3629	875	2419	4726
DPW5	6	50%	1407	1339	176	1027	1525
DP13	5	42%	1143	2058	1865	1033	5788
DPW1	5	42%	1504	1423	249	1080	1742
DP402	4	33%	4386	4257	497	3472	4786

DSA present

Red = DSA against cell #037 only

Blue = DSA against cell #038 only

Green = DSA against cell #037 and #038

Table 15. Summary of Single Antigen results Serum #042

Class I							
*** Serum 42 ***							
12 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
A1	12	100%	9588	9340	1674	5709	11463
A26	12	100%	17906	17166	2613	9504	19687
A29	12	100%	20257	19043	2736	10790	21315
A3	12	100%	5390	5599	1191	3231	8534
A30	12	100%	16010	15801	2719	7683	18589
A31	12	100%	12702	12162	2103	6562	14660
A33	12	100%	11484	11257	2057	5788	13762
A34	12	100%	12690	12115	2029	6127	14147
A36	12	100%	8038	7818	1366	4621	9409
A43	12	100%	17575	16847	2540	9397	19504
A74	12	100%	12627	12333	2408	6267	15436
A80	12	100%	9441	8866	1791	5049	11161
B42	12	100%	3309	3221	699	1940	4344
B7	12	100%	4734	4596	949	2650	5847
B55	11	92%	3131	3125	604	1980	4029
B56	11	92%	2787	2710	503	1689	3490
B67	11	92%	3202	3182	656	1941	4240
A11	10	83%	4844	5051	1183	2886	7717
A66	10	83%	10030	9745	1912	4893	12206
B81	9	75%	3573	3314	846	1921	4436
B82	9	75%	2560	2617	577	1610	3460
B27	7	58%	1463	1460	284	1028	2015
B48	7	58%	1264	1247	179	913	1487
B54	7	58%	1408	1487	282	1104	2087
B8101	4	33%	3588	3416	323	2858	3633
A1101	3	25%	4918	5131	387	4801	5674
A1102	3	25%	4568	4620	371	4194	5098
A6601	3	25%	9192	9251	358	8845	9716
A6602	3	25%	10137	10142	53	10081	10210
B2708	3	25%	1314	1375	119	1270	1542
B60	3	25%	875	854	193	608	1080
B8201	3	25%	2560	2614	102	2525	2757
B73	1	8%	324	324	-	324	324
CW4	1	8%	381	381	-	381	381
CW7	1	8%	390	390	-	390	390

Class II							
*** Serum 42 ***							
12 typing Labs							
Antigen	No.Labs	Consensus	Median	Mean	Std Dev	Min	Max
DQ4	12	100%	5458	5280	1044	3178	6947
DQ7	12	100%	19783	18801	3082	10461	21515
DQ8	12	100%	17609	17966	3708	8881	24081
DQ9	12	100%	19582	18768	3006	9974	21376
DR7	12	100%	17861	17439	3285	10243	21507
DR9	12	100%	9769	9411	1648	5878	11554
DPW1	10	83%	2775	2754	621	1808	3612
DPW5	10	83%	5688	5472	991	3514	6674
DQ2	10	83%	3969	3774	784	2361	4880
DP10	9	75%	2129	2108	250	1719	2689
DP11	9	75%	2733	2633	392	1998	3281
DP13	9	75%	3459	3309	651	2265	4500
DP14	9	75%	2226	2213	251	1763	2667
DP19	9	75%	2780	2672	386	2017	3275
DP9	9	75%	2213	2247	228	1977	2730
DPW3	8	67%	2332	2358	330	1851	2988
DPW6	8	67%	2199	2207	272	1732	2687
DP17	7	58%	1875	1875	174	1548	2161
DP20	6	50%	1377	1299	226	839	1497
DP18	5	42%	1667	1627	213	1303	1884
DP15	3	25%	857	865	126	716	1024
DPW4	3	25%	1130	1080	70	982	1130
DR18	3	25%	706	898	287	684	1304
DP23	1	8%	367	367	-	367	367
DP28	1	8%	354	354	-	354	354
DP401	1	8%	1012	1012	-	1012	1012
DR53	1	8%	323	323	-	323	323

DSA present

Red = DSA against cell #037 only

Blue = DSA against cell #038 only

Green = DSA against cell #037 and #038

Table 16. Individual laboratory results for Serum #039 - class I by Luminex

Center	A2	A23	A24	A25	A26	A32	A33	A34	A68	A69	B13	B27	B37	B38	B41	B42	B44	B47	B48	B49	B51	B52	B53	B54	Other	
23	4031	8662	8176	8842	3055	9557	5972	5780	8609	7931	12236	14624	8551	6896	5401	8118	6356	12634	10887	7817	6055	6157	6431	3829	B60,B61,A66,B82>	One Lambda
206	5190	9529	8824	10043	3623	11278	8130	7399	11372	10726	15238	17614	9650	7538	5685	8989	7234	14571	13722	8056	5915	5980	6735	3833	B60,B61,A66,B82>	One Lambda
774	3960	6627	5700	7362	2227	8620	6000	6480	8328	8022	13300	16889	7855	6032	4651	7140	6780	12680	11297	6887	4755	4431	5382	3135	B60,B61,A66,B82>	One Lambda
792	3144	5540	5427	6134	1832	6184	4288	4830	6543	5986	9535	13221	5984	4568	3705	5465	5245	9352	8706	4715	3623	3373	3718	2275	A11,B60,B61,A66>	One Lambda
836	5061	8331	8011	8861	3136	9363	7115	7422	10732	9520	14200	18723	9228	11180	5674	8276	7809	14196	12529	6970	5460	5029	5535	3386	A203,B60,B61,B62>	One Lambda
1160	2983	6688	6467	6899	2042	7544	4677	4994	7280	6435	11575	15255	7062	5391	4382	6302	6024	11265	9743	5531	4340	4037	4522	2307	B60,B61,A66,B82>	One Lambda
2400	3654	6974	6441	7520	2829	7949	5826	5463	8374	7444	12506	15125	7913	5875	4381	7142	5412	12457	10792	6256	4114	4019	4600	2898	B60,B61,A66,B82>	One Lambda
3224	4359	8574	7331	8786	2800	9950	6801	7552	10122	8848	13918	17980	8579	6827	5300	8195	8030	13034	11852	7333	5908	5416	5734	3458	A203,B60,B61,B7>	One Lambda
3625	2484	5131	4241	5260	1351	6061	3793	3757	5965	5376	9191	12475	4997	3400	3414	5627	4179	8818	8387	3557	3069	2883	3221	1783	B60,B61,B7,B45>	One Lambda
3753	3791	6789	5809	7592	2343	8568	6034	5587	8705	8351	13430	16550	7923	5781	4948	6934	5868	13111	11576	5898	4424	4454	5169	3015	B60,B61,A66,B82>	One Lambda
3966	NT																									
8001	3952	7188	7197	7728	2622	8614	6169	6598	9006	8140	13224	17005	7763	6292	4562	6590	7164	12761	11619	6390	4909	4738	5254	2787	B60,B61,A66,B82>	One Lambda
Avg	3874	7276	6693	7730	2533	8517	5891	5987	8640	7889	12578	15951	7773	6344	4737	7162	6373	12262	11010	6310	4779	4592	5118	2973		
Std Dev	820	1361	1365	1361	652	1557	1261	1220	1666	1555	1872	1984	1355	1968	754	1136	1172	1798	1581	1343	985	1018	1057	655		
MFI %CV	21%	19%	20%	18%	26%	18%	21%	20%	19%	20%	15%	12%	17%	31%	16%	16%	18%	15%	14%	21%	21%	22%	21%	22%		

DSA present

Red = DSA against cell #037 only

Blue = DSA against cell #038 only

Green = DSA against cell #037 and #038

Table 17. Individual laboratory results for Serum #040 - class I by Luminex

Center	A2	A29	A31	A32	A33	A74	B13	B27	B41	B42	B45	B46	B47	B48	B49	B50	B60	B61	B7	B73	B55	B8	Cw10	Cw17	Other		
23	6670	13006	15142	16546	13450	17207	12002	13599	17395	10756	9186	5296	11646	19992	6990	9390	20360	17237	14850	16977	3803	4224	12492	8151	A66,B62,B54>	One Lambda	
206	6946	9779	13833	15144	10494	15602	13150	15260	15346	5731	9684	4383	12062	12853	5485	9534	13754	15410	16338	16175					B81,A6602	One Lambda	
774	5700	10351	12220	15275	10735	15167	14206	15900	17817	7913	8675	5973	12416	21847	5599	9013	22491	19900	17309	17240	2482	2355	15357	7483	A66,A30,B16>	One Lambda	
792	3811	8451	10088	11395	8472	11530	10626	11890	13147	5873	6563	3141	8760	14209	4210	6923	14350	14211	12245	12688	1682	1678	10182	3477	A66,B62,B54>	One Lambda	
836	5832	11664	13093	16301	11401	15858	14407	15408	17299	7958	10671	4849	12595	16063	6783	10984	16463	17781	16997	16950	10757	2547	14664	5480	A203,B62,B54>	One Lambda	
1160	3670	10052	11577	13524	10734	13607	11863	13214	16245	8231	7043	3356	10545	20080	5136	7458	20856	18368	14589	14741	2182	1974	12961	5558	B54,B67,A30>	One Lambda	
2400	5493	9442	11522	13799	10146	13652	13385	15285	15738	7605	10291	5217	12686	14677	6610	10528	16314	16266	16491	15311	2999	2676	13670	5874	A66,A30,B81>	One Lambda	
3224	6107	11376	13325	15529	10930	15627	13362	14820	15887	6744	9048	4020	10593	14570	5195	9461	14230	15807	16396	16626	2275	2007	12721	4000	A203,B67,A30>	One Lambda	
3625	3696	9328	9627	11782	9441	12010	11086	10940	14618	7583	7529	3523	9772	17401	5317	7835	17236	16015	12800	12527	2250	2185	10985	5205	B62,B54,B56>	One Lambda	
3753	4755	8591	12287	14024	9596	14527	12228	14374	17279	5990	8636	4204	10962	19137	4747	8561	19943	17132	15544	15601	1715	1865	12599	6114	B67,B81,Cw2>	One Lambda	
3966	NT																										
8001	4880	9660	12021	14319	9438	13872	12566	14395	14893	5287	8534	3552	10724	13290	4399	8654	12940	15462	15158	15507	1645	1531	12127	4026	A66,B67,A30>	One Lambda	
Avg	5233	10155	12249	14331	10440	14424	12626	14099	15969	7243	8715	4319	11160	16738	5497	8940	17176	16690	15338	15486	3179	2304	12776	5537			
Std Dev	1166	1374	1591	1671	1307	1702	1207	1558	1428	1560	1283	918	1250	3112	939	1235	3274	1597	1642	1625	2744	766	1547	1493			
MFI %CV	22%	14%	13%	12%	13%	12%	10%	11%	9%	22%	15%	21%	11%	19%	17%	14%	19%	10%	11%	10%	86%	33%	12%	27%			

DSA present

Red = DSA against cell #037 only

Blue = DSA against cell #038 only

Green = DSA against cell #037 and #038

Table 18. Individual laboratory results for Serum #041 - class I by Luminex

Center	A2	A68	A69	B57	B58	B60	Cw9	Cw10	B41	B46	B47	B50	B61	B45	B48	A33	B49	B44	B13	A34	Cw15	Cw1	Cw8	A203	Other		
23	18328	16986	17819	8699	8558	4461	12811	12099	2527	2736	2602	2015	2968	1987	2167	2770	1754	1189	1463	1643	4987	1774	1247		A29,A31,B8,Cw16	One Lambda	
206	20323	19720	20486	9157	8379	4576	15558																				One Lambda
774	21865	20620	20499	7276	6827	3872	14226	13013	2255	2199	2052	2008	2742	2032													One Lambda
792	17631	16141	16667	5310	4620	3008	10762	9692	1454	1458	1395	1312	1934	1222	1262	1188	1060	882	846	991	689	576	474		Cw4,A24,A29,A30>	One Lambda	
836	19661	20135	20003	7755	6877	4586	15099	14067	2449	2510	2242	2237	3187	2070	2107	1837	1788	1468	1375	1512	1237		1232	20059	A210,B4005	One Lambda	
1160	20017	18070	19386	4745	4119	2554	10154	9185	1149	1258	1233	1034	1772		1146	1079											One Lambda
2400	21867	21992	22091	10611	9963	6785	16919	16266	4084	3871	4179	3844	4321	3546	3476	2861	3368	2785	2606		2744						One Lambda
3224	20440	20206	19409	8307	7275	3888	14339	13235	2155	1937	1801	1949	2533	1825	1520	1218	1595	1258	1234	1212		1102		20472		One Lambda	
3625	15561	14677	14262	3870	3011	2143	8689	7947	836	1093	909	725	1446	746	865	687	500			543	1663					B37	One Lambda
3753	20639	20722	21136	6719	6330	4032	14024	13158	2409	1897	2156	2116	2329	2122	1714	1358	1803	1623	1418								One Lambda
3966	12205	11495	11199	4409	3913	2271	7633	7273																			One Lambda
8001	20163	19333	19782	6864	5990	3553	13342	12394	1961	1403	1689	1733	2167	1657	1300		1428	1060									One Lambda
Avg	19058	18341	18562	6977	6322	3811	12796	11666	2128	2036	2026	1897	2540	1912	1729	1625	1662	1466	1490	1180	2264	1151	984	20266			
Std Dev	2797	3027	3138	2077	2102	1278	2873	2781	900	841	911	848	827	764	784	801	822	631	591	438	1699	600	442	292.04			
MFI %CV	15%	17%	17%	30%	33%	34%	22%	24%	42%	41%	45%	45%	33%	40%	45%	49%	49%	43%	40%	37%	75%	52%	45%	1%			

DSA present

Red = DSA against cell #037 only

Blue = DSA against cell #038 only

Green = DSA against cell #037 and #038

Table 19. Individual laboratory results for Serum #042 - class I by Luminex

Center	A1	A26	A29	A3	A30	A31	A33	A34	A36	A43	A74	A80	B42	B7	B55	B56	B67	A11	A66	B81	B82	B27	B48	B54	Other	
23	11463	17382	18089	8534	16000	14328	13762	12954	9409	16833	14881	10530	4075	5847	4029	3309	4068	7717	12206	3937	3460	2015	1487	2087	B60	One Lambda
206	11376	18838	19228	5900	15983	14660	13602	12184	9244	17988	15436	11161	4344	5651	4027	3490	4240	5531	11539	4436	3388					One Lambda
774	9619	18429	20751	5188	16756	11767	11255	13603	7800	18144	12299	8773	3044	4505	2929	2604	2988	4831	10523	3184	2451					One Lambda
792	7511	15090	17588	4768	15607	10730	9568	11926	6543	15131	10332	7188	2641	3618	2354	2041	2476	4418	8419	2674	1981	1028	913	1104	Cw4,B60,B73,Cw7	One Lambda
836	9320	19169	20928	6550	18589	13095	12136	14147	7810	18739	13143	9143	3292	4670	3022	2797	3003	4918	10200			1509	1340	1384	B8101,B2708,A1101>	One Lambda
1160	7945	18497	20298	5303	18085	11428	10370	12973	6879	17862	10980	7260	2125	3270	1980	1689	1941	4604	9794	2160	1610					One Lambda
2400	10916	19687	21315	6162	16019	14029	12881	11652	9205	19504	14747	10570	3771	5616	3537	2991	3568	6101	10721	4264	3055					One Lambda
3224	10648	17359	20499	5839	17641	13201	12330	13772	8963	17288	13771	10285	3726	5271	3443	3008	3598					1566	1173	1582	B8101,B2708,A1101>	One Lambda
3625	8016	16579	18500	5476	15160	10742	10431	12575	6678	15659	10895	6902	2981	4440	2741	2350	2571				2388	1228	1140	1335	B60,B8101,B2708>	One Lambda
3753	9556	18539	20216	5152	14498	12739	11280	10667	8265	18456	12711	9738	3325	4826	3185	2754	3202	4656	9860	3677	2667	1414	1416	1514		One Lambda
3966	5709	9504	10790	3231	7683	6562	5788	6127	4621	9397	6267	5049	1940	2650				2886	4893	1921						One Lambda
8001	10001	16919	20323	5085	17602	12664	11688	12804	8409	17169	12543	9798	3393	4797	3131	2787	3351	4856	9299	3573	2560	1463	1264	1408	B8101,B8201	One Lambda
Avg	9340	17166	19044	5599	15802	12162	11258	12115	7819	16848	12334	8866	3221	4597	3125	2711	3182	5052	9745	3314	2618	1460	1248	1488		
Std Dev	1749	2729	2857	1244	2840	2197	2148	2120	1426	2653	2515	1871	730	991	633	527	688	1247	2015	898	612	307	193	305		
MFI %CV	19%	16%	15%	22%	18%	18%	19%	17%	18%	16%	20%	21%	23%	22%	20%	19%	22%	25%	21%	27%	23%	21%	15%	20%		

DSA present

Red = DSA against cell #037 only

Blue = DSA against cell #038 only

Green = DSA against cell #037 and #038

Table 20. Individual laboratory results for Serum #039 and #040- class II by Luminex

**** Serum 39 ****					**** Serum 40 ****					
Center	DP10	DPW6	Other		Center	DQ2	DP13	DP8	Other	
23				One Lambda	23					One Lambda
206				One Lambda	206					One Lambda
774				One Lambda	774					One Lambda
792	309	304		OneLambda	792	1681		310		One Lambda
836	NEG			One Lambda	836	2443			DQB1*02:01, DQA1*05:01	One Lambda
1160	NEG			One Lambda	1160	NEG				One Lambda
2400				One Lambda	2400	2358				One Lambda
3224	NEG			One Lambda	3224				DQB1*02:01, DQA1*05:01	One Lambda
3625				One Lambda	3625	2079	603			One Lambda
3753	NEG			One Lambda	3753	NEG				One Lambda
3966				One Lambda	3966					One Lambda
8001	NEG			One Lambda	8001	NEG				One Lambda
Avg	-	-			Avg	2140	-	-		
Std Dev	-	-			Std Dev	343	-	-		
MFI %CV	-	-			MFI %CV	16%	-	-		

Table 21. Individual laboratory results for Serum #041 - class II by Luminex

**** Serum 41 ****																											
Center	DQ2	DR11	DR13	DR14	DR17	DR18	DR52	DP14	DP20	DP9	DPW3	DPW6	DR7	DP10	DP17	DP18	DP28	DPW2	DP11	DP19	DPW4	DPW5	DP13	DPW1	DP402	Other	
23	4191	4523	5121	4003	14963	13010	8339	7174	6960	7148	6577	5944	2884	4857	5910	4079	3710	4434	1243	1373	2419	1446					One Lambda
206	5639	5713	7621	5575	19019	17359	9970						3300														One Lambda
774	6992	3798	4212	3693	12030	11625	8935	5730	5714	5477	5500	5295	3249														One Lambda
792	7034	4608	4974	4458	15155	13613	11009	6102	6326	6142	6536	5969	2364	4157	5481	3730	3612	3285	1254	1315	3936	1190	5788	1504			One Lambda
836	10045	5723	7269	6201	18990	17356	14681	7649	7821	7828	8139	7330	3121	4619	6643	4653	4087	4065	1396	1316		1367	1133	1742	4556		One Lambda
1160	5796	3615	3774	3308	14544	13518	11038	5334	5606	5509	5668	5155	1549	3451	4705	3484	3141	3104						1080	3472		One Lambda
2400	5401	5810	7116	5780	18546	17809	9690	7501	7873	8045	7694	6513	3020	5131	6980	3802	3651	4175							4786		One Lambda
3224	8265	5168	6427	5265	17562	16297	13379	7450	7822	7665	8019	7081	2475	4798	6648	4682	4266	3935	1524	1381	4726	1525	1143				One Lambda
3625	5046	2980	3223	2743	11829	11632	13501	6037	5755	5507	5567	5491	1753	3734	5586	3182	3056	3361	945	1172	3471	1027	1033	1192			One Lambda
3753	5254	4908	6321	4712	18043	16788	9058	6820	7093	7077	7142	6355	2645	4107	6182	3374	3101	3651							4215		One Lambda
3966	2963	2674	3588	2450	9881	9249	5043	4117	4425	4442	4455	4381		2775	3850						2660						One Lambda
8001	8761	5324	6976	5774	18000	16581	13374	7536	7865	8024	8184	7423	2437	4479	6510	4522	4277	3835	1405	1424	4562	1481	1197	1598			One Lambda
Avg	6282	4570	5552	4497	15714	14570	10668	6495	6660	6624	6680.1	6085.2	2617.9	4211	5850	3945	3656	3761	1295	1330	3629	1339	2059	1423	4257		
Std Dev	2016	1081	1590	1263	3143	2829	2750	1134	1176	1257	1267.4	967.84	579.49	724.8	978	568	485	444.8	201	87.94	958.8	193.2	2086	278.4	573.7		
MFI %CV	32%	24%	29%	28%	20%	19%	26%	17%	18%	19%	19%	16%	22%	17%	17%	14%	13%	12%	16%	7%	26%	14%	101%	20%	13%		

Table 22. Individual laboratory results for Serum #042 - class II by Luminex

**** Serum 42 ****																										
Center	DQ4	DQ7	DQ8	DQ9	DR7	DR9	DPW1	DPW5	DQ2	DP10	DP11	DP13	DP14	DP19	DP9	DPW3	DPW6	DP17	DP20	DP18	DP15	DPW4	DR18	Other		
23	4172	17036	15143	16770	15640	7988	2302	4561	2361	2039	2593	2265	2476	2643	2455	1851	1732	2161	1442		1024		1304		One Lambda	
206	5846	19397	16789	18644	20417	11027			4479																One Lambda	
774	4039	15695	15539	17969	14568	7749																			One Lambda	
792	5516	18597	17408	18105	16785	9518	3001	5278	3750	2129	2519	3459	1931	2643	2118	2367	2229	1784	1232	1476	716	982	684	DR53,DP23,DP28	One Lambda	
836	6947	21515	21029	20988	20277	11554	3612	6674	4880	2195	2821	3852	2246	2851	2387	2653	2453	1978	1312	1667		1130			One Lambda	
1160	4659	21474	21000	21376	16627	8217	2594	5009	3109	1719	2013	3145	1763	2056	1977	2296	2058	1548		1884					One Lambda	
2400	5558	20608	17758	19674	21507	10600	3540	6625	4187	2689	3281	4500	2667	3275	2730	2988	2687								One Lambda	
3224	6236	21121	19959	21053	18937	11110	1808	6184	4232	2129	2915	3504	2226	2780	2250	2468	2322	1931	1497	1303					DP401	One Lambda
3625	5399	18293	24081	19838	13784	8662	2416	4609	3540	1934	1998	3221	2221	2017	2017	2157	2013	1875	839	1805	857	1130	706		One Lambda	
3753	5381	20168	17460	19490	20646	10618	2956	6098	2742	2193	2825	2368	2252	3002	2213										One Lambda	
3966	3178	10461	8881	9974	10243	5878	1901	3514																	One Lambda	
8001	6440	21248	20551	21337	19846	10019	3413	6168	4469	1951	2733	3475	2141	2784	2077	2091	2168	1852	1477						One Lambda	
Avg	5281	18801	17967	18768	17440	9411.67	2754	5472	3774.9	2109	2633	3310	2214	2672	2247	2359	2208	1876	1300	1627	866	1081	898			
Std Dev	1091	3219	3873.3	3140	3431.2	1721.47	655	1044.5	826.15	266	416	690	266	409	242	352	291	188	248	238	154	85.4	352			
MFI %CV	21%	17%	22%	17%	20%	18%	24%	19%	22%	13%	16%	21%	12%	15%	11%	15%	13%	10%	19%	15%	18%	8%	39%			

Table 23. Individual Virtual crossmatch results for Serum #041 vs. Donor #001

Donor #001 - HLA genotype: A*01:01-A*31:01-B*51:01-B*55:01-C*02:02-C*03:03:01G/DRB1*07:01-DRB1*14:54-DRB4*01:01:01G-DRB3*02:02:01G-DQB1*02:02-DQB1*05:03-DPB1*04:01

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-041		Negative	A31(1850), Cw9(12811)	Positive	DR7(2884), DR14(4221), DR52(8339), DQ2(4191)	Unacceptable	
206	MX-041	94	Positive	Cw9(15558)	Positive	DR7(330), DR14(5575), DR52(9970), DQ2 (5639)	Unacceptable	
774	MX-041		Positive	C*03:03(14000)	Positive	DR7(3000), DR14(3000), DR52(4000), DQ2(3000)	Unacceptable	
792	MX-041		Positive	A31(702), Cw9(10762)	Positive	DR14(3663), DR7(2364), DR52(0202=5404), DQ2(2948)	Unacceptable	Crossmatch could be <200 Channel shifts, may be acceptable with desensitization
836	MX-041	97	Positive		Positive		Unacceptable	DSA 1000 MFI=Pos
1160	MX-041	93	Positive	Cw9(10154)	Positive	DR7(1549), DR14(2517), DQ2(2189), DR52(4403)	Unacceptable	DQB1*05:03 is not part of SAB panel. However DQB1*05:01 and DQB1*05:02 are negative
2400	MX-041	97	Negative	none	Positive	DRB1*07:01(2866), DRB1*14:54(5066), DRB3*02:02(7057), DQB1*02:02(4026)	Unacceptable	
3224	MX-041	96	Positive	Cw9(14339)	Positive	DR7(2475), DR52(5888), DQ2(8265), DR14(5262)	Unacceptable	
3625	MX-041	92	Positive	Cw9(8689)	Positive	DR7(1753), DR14(2743), DRB3(13501), DQ2(5046)	Unacceptable	Cw9-previous transplant mismatch
3753	MX-041	97	Positive	Cw9((14024)	Positive	DR7(2645), DR14(4712), DR52(9058), DQ2(5254)	Unacceptable	Cw9 is a repeat mismatch with the prior donor
3966	MX-041		Positive	Cw9(7633)	Positive	DR52(5042), DQ2(2963), DP4(2660), DR14(2450)	Unacceptable	
8001	MX-041	97	Positive	C*03:03(13342)	Positive	DRB1*07:01(2437), DRB1*14:54(4313), DRB3*02:02(5985), DQB1*02:02(3846)	Unacceptable	DQB1*05:03 not included on antibody panel

Table 24. Individual Virtual crossmatch results for Serum #041 vs. Donor #002

Donor #002 - HLA genotype: A*02:01-A*36:01-B*53:01-B*58:01-C*03:02-C*04:01:01G/DRB1*03:01-DRB1*03:02-DRB3*01:01-DRB3*02:02:01G-DQB1*02:01-DQB1*04:02-DPB1*01:01-DPB1*04:01

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-041		Positive	A2(18328), B58(8558), Cw10(12555)	Positive	DR17(14963), DR18(13010), DR52(8339), DQ2(4190)	Unacceptable	
206	MX-041	94	Positive	A2(20323), B58(8379)	Positive	DR17(19019), DR18(17359), DR52(9970), DQ2(5639)	Unacceptable	
774	MX-041		Positive	A2(22000), B58(7000), Cw10(12500)	Positive	DR17(12000), DR18(11500), DR52(9000), DR52(4000), DQ2(3000)	Unacceptable	
792	MX-041		Positive	A2(17631), A36(432), B58(4620), C03:02(9592), Cw(369)	Positive	DR17(15155), DR18(13613), DR52(11009), DQ2(7304), DP1(1504)	Unacceptable	A2 RPT MM
836	MX-041	97	Positive		Positive		Unacceptable	DSA 1000 MFI=Pos
1160	MX-041	93	Positive	A2(20017), B58(4119), Cw10(9185)	Positive	DR17(14544), DR18(13518), DQ2(5796), DR52(11038)	Unacceptable	
2400	MX-041	97	Positive	A*02:01(21754), B*58:01(9523), C*03:02(13394)	Positive	DRB1*03:01(18546), DRB1*03:02(17809), DRB3*02:02(7053), DQB1*02:01(5639)	Unacceptable	
3224	MX-041	96	Positive	A2(20472), B58(7275), Cw10(13235)	Positive	DR17(17562), DR18(16297), DR52(5888), DQ2(8265)	Unacceptable	
3625	MX-041	92	Positive	A2(15562), B58(3011), Cw10(8689)	Positive	DR7(11829), DR14(11632), DRB3(13501), DQ2(5046), DR1(1192)	Unacceptable	A2-previous transplant mismatch
3753	MX-041	97	Positive	A2(20639), B58(6330), Cw10(13158)	Positive	DR17(18043), DR18(16788), DR52(9058), DQ2(5254)	Unacceptable	A2 is a repeat mismatch with the prior donor. Possible CDC positive on both T & B cells.
3966	MX-041		Positive	A2(12204), Cw10(7273), B58(3912)	Positive	DR52(5042), DQ2(2963), DP4(2660)	Unacceptable	
8001	MX-041	97	Positive	A*02:01(20163), B*58:01(5990), C*03:02(21394)	Positive	DRB1*03:01(18000), DRB1*03:02(16581), DRB3*01:01(13374), DRB3*02:02(5985)	Unacceptable	

Table 25. Individual Virtual crossmatch results for Serum #041 vs. Donor #003

Donor #003 - HLA genotype: A*11:01-A*24:02-B*15:35-B*35:01:01G-C*07:02:01G-C*12:03/DRB1*15:01-DRB1*15:02-DRB5*01:01-DQB1*05:02-DPB1*01:01-DPB1*05:01:01G

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-041		Negative	none	Negative	none	Acceptable	
206	MX-041	94	Negative	none	Negative	none	Acceptable	
774	MX-041		Negative	none	Negative	DP5(2000)	Acceptable	
792	MX-041		Negative	Cw7(588)	Negative	DP1(1504), DP5(1190)	Acceptable	Low level DSA may result in negative crossmatch
836	MX-041	97	Positive		Positive		Unacceptable	DSA 1000 MFI=Pos
1160	MX-041	93	Negative	none	Negative	none	Acceptable	Although it is the second transplant, the new donor does not have any repeat mismatched antigen from the previous donor. B*15:35 not on testing panel but serologic equivalent to B62.
2400	MX-041	97	Negative	none	Negative	none	Acceptable	
3224	MX-041	96	Negative	none	Negative	none	Acceptable	
3625	MX-041	92	Negative	none	Negative	DPB1*01(1192), DPB1*05(1027)	Acceptable	
3753	MX-041	97	Negative	none	Negative	No DSA	Acceptable	
3966	MX-041		Negative		Negative		Acceptable	
8001	MX-041	97	Negative	none	Negative	DPB1*01:01(1598), DPB1*05:01(1481)	Acceptable	B*15:35 not included on antibody panel

Table 26. Individual Virtual crossmatch results for Serum #041 vs. Donor #004

Donor #004 - HLA genotype: 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

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-041		Negative	B41(2526)	Negative	DPB1*04:02(4826)	Acceptable	
206	MX-041	94	Negative	none	Negative	none	Acceptable	
774	MX-041		Positive	B41(2000)	Negative	DP402(3000), DP105	Unacceptable	
792	MX-041		Negative/ Borderline Positive	A30(472), B4101(1454)	Positive	DP0402(3936)	Unacceptable	Crossmatch could be <200 Channel shifts, may be acceptable with desensitization
836	MX-041	97	Positive		Positive		Unacceptable	DSA 1000 MFI=Pos
1160	MX-041	93	Borderline Negative	B41(1149)	Positive	DP4(3472)	Unacceptable	No DRB1*08:04, B*41:02, and B*42:02 on antibody panel. Use MFI of B*41:01.
2400	MX-041	97	Weak Positive	B*41:02(3674)	Weak Positive	DPB1*04:02(4640)	Acceptable	More followup post transplant
3224	MX-041	96	Positive	B41(2155)	Positive	DPB1*04:02(4726)	Unacceptable	Both antibodies are weak. Would recommend Final XM to determine if Acceptable or Unacceptable
3625	MX-041	92	Negative	B41(836)	Positive	DPB1*04:02(3471)	Unacceptable	
3753	MX-041	97	Negative	B41(2409)	Negative	DP402(4215)	Acceptable	Acceptable with augmented immunosuppression. Possible Pronase weak pos B FXM, considering that DP402 and DP105 have the same ARS and the donor could be considered homozygous for DP402.
3966	MX-041		Negative		Positive	DP4(2660)	Unacceptable	
8001	MX-041	97	Negative	none	Positive	DPB1*04:02(4562)	Unacceptable	B*41:02, B*42:02, DRB1*08:04, DPB1*105:01 not included on antibody

Table 27. Individual Virtual crossmatch results for Serum #042 vs. Donor #001

Donor #001 - HLA genotype: A*01:01-A*31:01-B*51:01-B*55:01-C*02:02-C*03:03:01G/DRB1*07:01-DRB1*14:54-DRB4*01:01:01G-DRB3*02:02:01G-DQB1*02:02-DQB1*05:03-DPB1*04:01

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-042		Positive	A1(11463), A31(14328), B55(4029)	Positive	DR7(15640), DQ2(3457), DPB1*04:01(1249)	Unacceptable	
206	MX-042	98	Positive	A1(11376), A31(14660), B55(4027)	Positive	DR7(20417), DQ2(4479)	Unacceptable	
774	MX-042		Positive	A1(9500), A31(12000), B55(3000)	Positive	DR7(145000)	Unacceptable	
792	MX-042		Positive	A1(7511), B55(2354), A31(10730)	Positive	DR7(16785), DR53(323), DQ2(3750), DP0401(982)	Unacceptable	
836	MX-042	98	Positive		Positive		Unacceptable	DSA 1000 MFI=Pos
1160	MX-042	95	Positive	A1(7945), A31(11428), B55(1980)	Positive	DR7(16627), DQ2(3109)	Unacceptable	DQB1*05:03 is not part of SAB panel. However DQB1*05:01 and DQB1*05:02 are negative.
2400	MX-042	98	Positive	A*01:01(10800), A*31:01(13848), B*55:01(3410)	Positive	DRB1*07:01(21507), DQB1*02:02(4838)	Unacceptable	
3224	MX-042	96	Positive	A1(10648), A31(13201), B55(3443)	Positive	DR7(18937), DP4(1012), DQ2(4232)	Unacceptable	
3625	MX-042	96	Positive	A1(8016), A31(10742), B55(2741)	Positive	DR7(13784), DQ2(3540), DPB1*04:01(1130)	Unacceptable	
3753	MX-042	85	Positive	A1(9556), A31(12739), B55(3185)	Positive	DR7(20646), DQ2(2742)	Unacceptable	No repeat mismatch with paternal antigens. Possible CDC positive on both T and B cells.
3966	MX-042		Positive	A31(6562), A1(5708)	Positive	DR7(10243)	Unacceptable	
8001	MX-042	98	Positive	A*01:01(10001), A*31:01(12664), B*55:01(3131)	Positive	DRB1*07:01(19846), DQB1*02:02(4469)	Unacceptable	DQB1*05:03 not included on antibody panel

Table 28. Individual Virtual crossmatch results for Serum #042 vs. Donor #002

Donor #002 - HLA genotype: A*02:01-A*36:01-B*53:01-B*58:01-C*03:02-C*04:01:01G/DRB1*03:01-DRB1*03:02-DRB3*01:01-DRB3*02:02:01G-DQB1*02:01-DQB1*04:02-DPB1*01:01-DPB1*04:01

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-042		Positive	A36(9409)	Positive	DR18(1304), DQ2(2361), DQ4(4172), DP1(2302)	Unacceptable	
206	MX-042	98	Positive	A36(9244)	Positive	DQ2(4479), DQ4(5846)	Unacceptable	
774	MX-042		Positive	A36(8000)	Positive	DR17(2000), DR18(1000), DQ2(2500), DQ4(4000)	Unacceptable	
792	MX-042		Positive	A36(6543), Cw4(381)	Positive	DR18(684), DQ2(3204), DQ4(5516), DP1(3001), DP0401(982)	Unacceptable	Crossmatch could be <200 Channel shifts, may be acceptable with desensitization
836	MX-042	98	Positive		Positive		Unacceptable	DSA 1000 MFI=Pos
1160	MX-042	95	Positive	A36(6879)	Positive	DQ2(1803), DQ4(2412), DP1(2594)	Unacceptable	
2400	MX-042	98	Positive	A*36:01*(9034)	Positive	DQB1*04:02(5090), DPB1*01:01(3248)	Unacceptable	
3224	MX-042	96	Positive	A36(8963)	Positive	DQ4(3011), DP4(1012), DQ2(4232), DP1(1808)	Unacceptable	
3625	MX-042	96	Positive	A36(6678)	Positive	DR18(706), DQ2(3540), DQ4(5399), DPB1*04:01(1130), DPB1*01:01(2416)	Unacceptable	DR18 & DQ4-previous pregnancy mismatches
3753	MX-042	85	Positive	A36(8265)	Positive	DQ2(2742), DQ4(5381), DP1(2956)	Unacceptable	DQ4 is a repeat mismatch paternal antigen, indicating increased risk for memory response from pregnancy.
3966	MX-042		Positive	A36(4620)	Positive	DQ4(3178), DP1(1900)	Unacceptable	
8001	MX-042	98	Positive	A*36:01(8409)	Positive	DQB1*04:02(6440), DPB1*01:01(3413)	Unacceptable	

Table 29. Individual Virtual crossmatch results for Serum #042 vs. Donor #003

Donor #003 - HLA genotype: A*11:01-A*24:02-B*15:35-B*35:01:01G-C*07:02:01G-C*12:03/DRB1*15:01-DRB1*15:02-DRB5*01:01-DQB1*05:02-DPB1*01:01-DPB1*05:01:01G

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-042		Positive	A11(7717)	Positive	none	Unacceptable	
206	MX-042	98	Wk Pos	A11(5532)	Negative	none	Unacceptable	
774	MX-042		Positive	A11(5000)	Negative	none	Unacceptable	
792	MX-042		Positive	A11(4418), Cw7(390)	Positive	DP1(3001), DP5(5083)	Unacceptable	
836	MX-042	98	Positive		Positive		Unacceptable	DSA 1000 MFI=Pos
1160	MX-042	95	Positive	A11(4604)	Positive	DP1(2594), DP5(5009)	Unacceptable	B*15:35 not on testing panel but serologic equivalent to B62.
2400	MX-042	98	Positive	A*11:01(6150)	Positive	DPB1*01:01(3248), DPB1*05:01(6121)	Unacceptable	
3224	MX-042	96	Positive	A11(5674)	Positive	DP1(1808), DP5(6184)	Unacceptable	
3625	MX-042	96	Positive	A11(4801)	Positive	DPB1*01:01(2416), DPB1*05:01(4609)	Unacceptable	
3753	MX-042	85	Negative-Borderline	A11(4656)	Negative-Borderline	DP1(2956), DP5(6098)	Acceptable	Acceptable with augmented immunosuppression depending on the patient's urgency for transplant. Possible Pronase positive B flow crossmatch.
3966	MX-042		Positive	A11(2885)	Positive	DP5(3514), DP1(1900)	Unacceptable	
8001	MX-042	98	Positive	A*11:01(4856)	Positive	DPB1*01:01(3413), DPB1*05:01(6168)	Unacceptable	B*15:35 not included on antibody panel

Table 30. Individual Virtual crossmatch results for Serum #042 vs. Donor #004

Donor #004 - HLA genotype: 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

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-042		Positive	A3(8534), A30(16000), B42(4075)	Positive	DQ7(17036)	Unacceptable	
206	MX-042	98	Positive	A3(5900), A30(15983), B42(4344)	Positive	DQ7 (19397)	Unacceptable	
774	MX-042		Positive	A3(5000), A30(13500), B42(3000)	Negative	none	Unacceptable	
792	MX-042		Positive	A3(4768), B4201(2641), A30(15607)	Positive	DQ7(18597)	Unacceptable	
836	MX-042	98	Positive		Positive		Unacceptable	DSA 1000 MFI=Pos
1160	MX-042	95	Positive	A3(5303), A30(11120), B42(2125)	Positive	DQ7(21474)	Unacceptable	No DRB1*08:04, B*41:02, and B*42:02 on antibody panel. Use MFI of B*42:01.
2400	MX-042	98	Positive	A*03:01(6050), A*30:01(16036)	Positive	DQB1*03:01(20364)	Unacceptable	
3224	MX-042	96	Positive	A3(5839), A30(17641), B42(3726)	Positive	DQ7(21121), DP5(6184)	Unacceptable	
3625	MX-042	96	Positive	A3(5476), A30(15160), B42(2981)	Positive	DQ7(18293)	Unacceptable	B42-previous pregnancy mismatch
3753	MX-042	85	Positive	A3(5152), A30(14498)	Positive	DQ7(20168)	Unacceptable	Possible CDC positive on both T and B cells.
3966	MX-042		Positive	A30(7683), A3(3231), B42(1939)	Positive	DQ7(10461)	Unacceptable	
8001	MX-042	98	Positive	A*30:01(5085), A*30:01(12013)	Positive	DQB1*03:01(21248)	Unacceptable	B*41:02, B*42:02, DRB1*08:04, DPB1*105:01 not included on antibody