Supplemental Table 1

Clinical and histological information for the 53 protocol biopsy samples included

Sample ID	Sample group	Living vs. Deceased donor	Biopsy ID	Paired baseline-postTX patient ID	Sample ID	Time point after transplantation	Cold ischemia time (hours)	Donor gender (0=female, 1=male)	Donor age (years)	Recipient gender (0=female, 1=male)	Recipient age (years)	Schwartz GFR at 3 months	Schwartz GFR at 6 months	Schwartz GFR at 12 months	Schwartz GFR at 24 months	Schwartz GFR at 36 months	Tubulitis	Interstitial inflammation	Glomerulitis	Vasculitis	Transplant glomerulopathy	Vascular intimal thickening	Interstitital fibrosis	Tubular atrophy	Arteriolar hyalinosis	Ischemic glomerular changes	Tubular vacuolisation	Global glomerulosclerosis scores	Tubular calcifications
1	Baseline biopsy training set	LIVING	Training-LD1	A	KT0412	0	4,0	0	39,9	1	14,7	73,8	97,0	84,1	105,5	115,0	0	0	0	0	0	0	0	0	0	0	0	0	0
2			Training-LD2	B	KT0613	0	0,5	1	21,9	1	1,8	131,7	126,0	NA	NA	NA	0	0	0	0	0	0	0	0	0	0	0	1	0
3			Training-LD3		KT0624	0	3,0	0	57,7	1	21,5	62,2	68,5	70,6	76,0	73,0	0	0	0	0	0	0	0	0	0	0	0	1	0
4			Training-LD4	C	KT0636	0	3,0	0	30,5	1	9,2	122,8	125,6	100,1	114,7	121,0	0	0	0	0	0	0	0	1	0	0	0	1	0
5			Training-LD5	D	KT0650	0	0,5	0	52,5	1	8,5	93,7	110,7	106,1	101,0	99,0	0	0	0	0	0	1	0	0	1	0	0	1	0
6			Training-LD6	E	KT0690-2	0	3,0	0	47,0	1	16,6	70,6	76,5	69,1	78,0	75,0	0	0	0	0	0	0	0	1	0	1	0	1	0
7			Training-LD7	F	KT0730	0	4,0	0	33,3	1	1,1	146,1	153,1	160,2	166,0	156,0	0	0	0	0	0	0	0	0	0	0	0	0	0
8			Training-LD8	G	KT0736	0	4,0	1	27,1	0	1,2	125,7	115,6	122,4	124,0	121,0	0	0	0	0	0	0	0	0	0	0	0	0	0
9			Training-LD9	H	KT0755	0	3,0	1	40,8	1	15,0	105,4	119,8	114,9	115,0	111,0	0	0	0	0	0	0	0	1	0	0	0	1	0
10		DECEASED	Training-DD1		KT0776	0	9,1	0	26,0	1	17,6	91,6	106,0	108,3	100,0	96,0	0	0	0	0	0	0	0	1	0	0	0	0	0
11			Training-DD2		KT0781	0	6,0	0	21,5	0	18,6	70,6	92,8	25,4	30,0	23,0	0	0	0	0	0	0	0	0	0	0	0	0	0
12			Training-DD3		KT0796	0	8,4	0	20,0	1	17,3	88,7	76,1	82,2	77,0	68,0	0	0	0	0	0	1	0	1	0	1	0	0	0
13			Training-DD4		KT0812	0	28,4	1	25,0	1	18,0	58,6	60,0	57,0	55,0	52,0	0	0	0	0	0	0	0	0	0	0	0	0	0
14			Training-DD5		KT0814	0	8,6	1	25,0	1	16,6	110,1	122,3	122,8	104,0	100,0	0	0	0	0	0	0	0	0	0	0	0	0	0
15			Training-DD6		KT0817	0	16,6	0	31,0	1	17,1	95,4	95,0	95,2	89,0	78,0	0	0	0	0	0	0	0	0	0	0	0	0	0
16			Training-DD7		KT0818	0	13,0	0	31,0	1	15,0	64,5	59,7	70,8	68,0	65,0	0	0	0	0	0	0	0	1	0	0	0	0	0
17			Training-DD8		KT0922	0	5,0	0	28,9	1	4,6	198,7	153,3	132,0	117,0	102,0	0	0	0	0	0	0	0	0	0	0	0	0	0
18			Training-DD9		KT0986	0	16,6	1	19,0	1	6,5	142,0	120,5	105,0	98,0	79,0	0	0	0	0	0	0	0	0	0	0	0	0	0

19	Baseline biopsy test set (Test set 1)	LIVING	Test1-LD1		KT0616	0	2,0	1	21,0	1	17,8	79,2	69,5	86,2	89,0	91,0	0	0	0	0	0	0	0	0	0	0	0	0	0
20			Test1-LD2		KT0738	0	1,0	1	47,0	1	19,0	68,2	90,7	98,3	98,6	NA	0	0	0	0	0	1	0	0	0	0	0	0	0
21			Test1-LD3		KT0752	0	3,0	0	54,0	0	2,4	111,4	118,3	166,8	176,0	175,0	0	0	0	0	0	0	0	1	0	0	0	0	0
22			Test1-LD4		KT0801	0	2,0	1	36,0	1	14,3	80,8	82,6	108,5	110,0	113,0	0	0	0	0	0	0	0	0	0	1	0	0	0
23			Test1-LD5		KT0816	0	3,0	0	25,0	0	17,3	123,8	86,4	96,5	99,0	98,0	0	0	0	0	0	0	0	1	0	1	0	1	0
24		DECEASED	Test1-DD1		KT0575	0	8,0	0	14,2	0	18,2	83,6	92,9	83,9	65,0	57,0	0	0	0	0	0	0	0	0	0	0	0	0	0
25			Test1-DD2		KT0799	0	7,2	1	14,0	1	18,3	71,9	59,7	67,4	65,0	58,0	0	0	0	0	0	0	0	0	0	0	0	1	0
26			Test1-DD3		KT0819	0	21,6	1	14,0	0	18,6	83,1	90,9	84,4	81,0	78,0	0	0	0	0	0	0	0	0	0	0	0	0	0
27			Test1-DD4		KT0832	0	9,7	1	21,0	1	9,3	99,8	100,5	119,7	104,0	98,0	0	0	0	0	0	0	0	0	0	0	0	0	0
28			Test1-DD5		KT0833	0	2,0	1	16,0	0	2,6	157,3	164,1	115,4	107,0	97,0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Post-transplantation biopsy (Test set 2)	LIVING	Test2-LD1		KT1046	1 2	3,0	1	40,8	1	15,0	105,4	119,8	114,9	115,0	111,0	0	0	0	0	0	0	1	1	1	0	0	0	0
30			Test2-LD2		KT0652	3	0,5	1	21,9	1	1,8	131,7	126,0	NA	NA	NA	0	0	0	0	0	0	0	1	0	0	0	0	0
31			Test2-LD3		KT0596	1 2	1,0	1	41,8	1	1,6	120,4	149,4	120,3	133,0	129,0	0	0	0	0	0	1	1	1	1	1	1	1	0
32			Test2-LD4		KT0581	2 4	5,0	1	20,8	1	16,4	89,1	89,1	89,7	83,3	85,0	0	0	0	0	0	2	1	1	0	1	1	1	0
33			Test2-LD5		KT0567	3	4,0	1	33,8	1	2,0	122,4	129,7	136,8	135,0	129,0	0	0	0	0	0	0	1	1	0	0	0	0	0
34			Test2-LD6		KT0563	2 4	5,0	1	23,6	1	20,3	61,6	53,0	47,1	47,1	51,0	0	0	0	0	0	0	0	0	0	0	0	0	0
35			Test2-LD7		KT0525	6	3,0	1	33,1	1	9,8	95,2	99,8	86,3	101,4	103,0	0	0	0	0	0	0	1	1	0	0	0	1	0
36			Test2-LD8		KT0474	1 2	4,0	0	20,9	0	20,9	82,8	79,5	109,4	98,6	101,0	0	0	0	0	0	0	1	1	0	0	1	0	0
37			Test2-LD9		KT0367	3	4,0	0	21,3	0	11,4	125,9	146,3	137,9	141,0	127,0	0	0	0	0	0	0	0	0	0	0	2	0	0
38		DECEASED	Test2-DD1		KT1131-1	1 2	13,0	0	31,0	0	15,0	64,5	59,7	70,8	68,0	61,0	0	0	0	0	0	0	1	1	0	0	0	1	0
39			Test2-DD2		KT1122	1 2	9,7	1	21,0	1	9,3	99,8	100,5	119,7	98,0	89,0	0	0	0	0	0	2	0	0	0	0	0	0	0
40			Test2-DD3		KT0947	6	7,2	1	14,0	1	18,3	71,9	59,7	67,4	56,0	51,0	0	0	0	0	0	0	0	0	0	0	0	0	0
41			Test2-DD4		KT0626	1 2	9,0	0	16,8	0	11,7	110,4	130,4	119,4	94,9	76,0	0	0	0	0	0	1	0	0	0	0	0	1	0
42			Test2-DD5		KT0602	3	8,0	0	14,2	0	18,2	83,6	92,9	83,9	65,0	57,0	0	0	0	0	0	0	0	1	0	0	0	1	0
43			Test2-DD6		KT0588	3	7,0	1	29,1	1	18,6	108,6	99,3	109,5	102,0	98,0	0	0	0	0	0	2	0	0	0	0	0	0	0
44			Test2-DD7		KT0555	2 4	13,0	1	20,4	1	18,7	105,0	112,4	99,6	107,5	88,0	0	0	0	0	0	0	0	1	1	1	0	0	0
45			Test2-DD8		KT0481	1 2	14,0	1	21,2	1	18,1	93,1	97,8	104,6	78,3	71,0	0	0	0	0	0	0	2	2	0	0	0	0	0
46			Test2-DD9		KT0430	3	4,0	1	22,8	1	2,3	158,9	115,0	101,0	89,0	76,0	0	0	0	0	0	0	2	2	1	0	0	0	1
47	Post-transplantation biopsy	LIVING	Post-TX paired 1	A	KT0548	1 2	4,0	0	39,9	1	14,7	73,8	97,0	84,1	105,5	115,0	0	0	0	0	0	0	1	1	0	1	0	1	0
30			Post-TX paired 2 =	B	KT0652	3	0,5	1	21,9	1	1,8	131,7	126,0	NA	NA	NA	0	0	0	0	0	0	0	1	0	0	0	0	0

	paired set		Test2-LD2																										
48			Post-TX paired 3	C	KT0876	1 2	3,0	0	30,5	1	9,2	122,8	125,6	100,1	114,7	121,0	0	0	0	0	0	0	0	0	0	0	0	0	0
49			Post-TX paired 4	D	KT0691	3	0,5	0	52,5	1	8,5	93,7	110,7	106,1	101,0	99,0	0	0	0	0	0	2	1	1	0	0	0	0	0
50			Post-TX paired 5	E	KT0921	1 2	3,0	0	47,0	1	16,6	70,6	76,5	69,1	78,0	75,0	0	0	0	0	0	0	0	1	0	1	0	0	0
51			Post-TX paired 6	F	KT0780	3	4,0	0	33,3	1	1,1	146,1	153,1	160,2	124,0	121,0	0	0	0	0	0	1	0	1	0	0	0	0	0
52			Post-TX paired 7	G	KT0785	3	4,0	1	27,1	0	1,2	125,7	115,6	122,4	124,0	121,0	0	0	0	0	0	2	0	1	0	0	2	1	0
53			Post-TX paired 8	H	KT0880	6	3,0	1	40,8	1	15,0	105,4	119,8	114,9	115,0	111,0	0	0	0	0	0	0	0	1	0	1	0	0	0

19	Baseline biopsy test set (Test set 1)	LIVING	Test1-LD1		KT0616	0	2,0	1	21,0	1	17,8	79,2	69,5	86,2	89,0	91,0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20			Test1-LD2		KT0738	0	1,0	1	47,0	1	19,0	68,2	90,7	98,3	98,6	NA	0	0	0	0	0	1	0	0	0	0	0	0	0	0
21			Test1-LD3		KT0752	0	3,0	0	54,0	0	2,4	111,4	118,3	166,8	176,0	175,0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
22			Test1-LD4		KT0801	0	2,0	1	36,0	1	14,3	80,8	82,6	108,5	110,0	113,0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
23			Test1-LD5		KT0816	0	3,0	0	25,0	0	17,3	123,8	86,4	96,5	99,0	98,0	0	0	0	0	0	0	0	1	0	1	0	1	0	0
24		DECEASED	Test1-DD1		KT0575	0	8,0	0	14,2	0	18,2	83,6	92,9	83,9	65,0	57,0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25			Test1-DD2		KT0799	0	7,2	1	14,0	1	18,3	71,9	59,7	67,4	65,0	58,0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
26			Test1-DD3		KT0819	0	21,6	1	14,0	0	18,6	83,1	90,9	84,4	81,0	78,0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27			Test1-DD4		KT0832	0	9,7	1	21,0	1	9,3	99,8	100,5	119,7	104,0	98,0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28			Test1-DD5		KT0833	0	2,0	1	16,0	0	2,6	157,3	164,1	115,4	107,0	97,0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Post-transplantation biopsy (Test set 2)	LIVING	Test2-LD1		KT1046	12	3,0	1	40,8	1	15,0	105,4	119,8	114,9	115,0	111,0	0	0	0	0	0	0	1	1	1	0	0	0	0	0
30			Test2-LD2		KT0652	3	0,5	1	21,9	1	1,8	131,7	126,0	NA	NA	NA	0	0	0	0	0	0	0	1	0	0	0	0	0	0
31			Test2-LD3		KT0596	12	1,0	1	41,8	1	1,6	120,4	149,4	120,3	133,0	129,0	0	0	0	0	0	1	1	1	1	1	1	1	0	0
32			Test2-LD4		KT0581	24	5,0	1	20,8	1	16,4	89,1	89,1	89,7	83,3	85,0	0	0	0	0	0	2	1	1	0	1	1	1	0	0
33			Test2-LD5		KT0567	3	4,0	1	33,8	1	2,0	122,4	129,7	136,8	135,0	129,0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
34			Test2-LD6		KT0563	24	5,0	1	23,6	1	20,3	61,6	53,0	47,1	47,1	51,0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35			Test2-LD7		KT0525	6	3,0	1	33,1	1	9,8	95,2	99,8	86,3	101,4	103,0	0	0	0	0	0	0	1	1	0	0	0	1	0	0
36			Test2-LD8		KT0474	12	4,0	0	20,9	0	20,9	82,8	79,5	109,4	98,6	101,0	0	0	0	0	0	0	1	1	0	0	1	0	0	0
37			Test2-LD9		KT0367	3	4,0	0	21,3	0	11,4	125,9	146,3	137,9	141,0	127,0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
38		DECEASED	Test2-DD1		KT1131-1	12	13,0	0	31,0	0	15,0	64,5	59,7	70,8	68,0	61,0	0	0	0	0	0	0	1	1	0	0	0	1	0	0
39			Test2-DD2		KT1122	12	9,7	1	21,0	1	9,3	99,8	100,5	119,7	98,0	89,0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
40			Test2-DD3		KT0947	6	7,2	1	14,0	1	18,3	71,9	59,7	67,4	56,0	51,0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41			Test2-DD4		KT0626	12	9,0	0	16,8	0	11,7	110,4	130,4	119,4	94,9	76,0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
42			Test2-DD5		KT0602	3	8,0	0	14,2	0	18,2	83,6	92,9	83,9	65,0	57,0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
43			Test2-DD6		KT0588	3	7,0	1	29,1	1	18,6	108,6	99,3	109,5	102,0	98,0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
44			Test2-DD7		KT0555	24	13,0	1	20,4	1	18,7	105,0	112,4	99,6	107,5	88,0	0	0	0	0	0	0	0	1	1	1	0	0	0	0
45			Test2-DD8		KT0481	12	14,0	1	21,2	1	18,1	93,1	97,8	104,6	78,3	71,0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
46			Test2-DD9		KT0430	3	4,0	1	22,8	1	2,3	158,9	115,0	101,0	89,0	76,0	0	0	0	0	0	0	2	2	1	0	0	0	1	0

Supplemental Table 1 (continued)

Supplemental Table 1 (continued)

47	Post-transplantation biopsy paired set	LIVING	Post-TX paired 1	A	KT0548	12	4,0	0	39,9	1	14,7	73,8	97,0	84,1	105,5	115,0	0	0	0	0	0	0	1	1	0	1	0	1	0
30			Post-TX paired 2 = Test2-LD2	B	KT0652	3	0,5	1	21,9	1	1,8	131,7	126,0	NA	NA	NA	0	0	0	0	0	0	0	1	0	0	0	0	0
48			Post-TX paired 3	C	KT0876	12	3,0	0	30,5	1	9,2	122,8	125,6	100,1	114,7	121,0	0	0	0	0	0	0	0	0	0	0	0	0	0
49			Post-TX paired 4	D	KT0691	3	0,5	0	52,5	1	8,5	93,7	110,7	106,1	101,0	99,0	0	0	0	0	0	2	1	1	0	0	0	0	0
50			Post-TX paired 5	E	KT0921	12	3,0	0	47,0	1	16,6	70,6	76,5	69,1	78,0	75,0	0	0	0	0	0	0	0	1	0	1	0	0	0
51			Post-TX paired 6	F	KT0780	3	4,0	0	33,3	1	1,1	146,1	153,1	160,2	124,0	121,0	0	0	0	0	0	1	0	1	0	0	0	0	0
52			Post-TX paired 7	G	KT0785	3	4,0	1	27,1	0	1,2	125,7	115,6	122,4	124,0	121,0	0	0	0	0	0	2	0	1	0	0	2	1	0
53			Post-TX paired 8	H	KT0880	6	3,0	1	40,8	1	15,0	105,4	119,8	114,9	115,0	111,0	0	0	0	0	0	0	0	1	0	1	0	0	0