

Table S1: Available pre- and post-transplant HLA-related datasets in the iGeneTRAiN cohorts

Abbreviations: Go-CAR: Genomics of Chronic Renal Allograft Rejection; CHOP: Children's Hospital of Philadelphia; UPenn: University of Pennsylvania; WTCCC-3: Wellcome Trust Case Control Consortium -3; GEN-03 DeKAF Genomics: Long-Term Deterioration of Kidney Allograft Function Genomics; CTOT: Clinical Trials in Organ Transplantation; LPCH: Lucile Packard Children's Hospital; UCOR: Utrecht Heart Transplant Study; Biobank of Vanderbilt University (BioVU); A-WISH: Gradual Withdrawal of Immune System Suppressing Drugs in Patients Receiving a Liver Transplant; A2ALL: Adult to Adult Living Donor Liver Transplantation Cohort Study; LTOG: Lung Transplant Outcomes Group; ULTx: Utrecht Lung Transplant Study

Supplementary Table 1: Available pre- and post-transplant HLA-related datasets in the iGeneTRaIN cohorts

	Study	Pre-transplant anti-HLA immunisation data available	Current PRA (within 12 weeks prior to transplant)	Peak PRA with no specific time-window	PRA determined by:			
					Luminex	CDC	ELISA	Other
KIDNEY	Go-CAR	Yes	Yes	No	Yes	Yes	No	No
	TRANSPLANT-LINES	Yes	Yes	Yes	No	Yes	No	No
	BioVU Kidney-Tx	Yes	Yes	Yes	Yes since 2005	Yes, upto 2010	Yes, upto 2010	Flow cytometry
	CHOP-Kidney Tx	Yes	Yes	Yes	Yes	No	No	No
	UPenn-Kidney Tx	Yes, from 1999	Yes, from 1999	Yes, from 1999	Yes from 2006	Yes prior to 2003	Yes prior to 2003	Flow beads until 2003
	WTCCC-3	Yes (subset)	Yes (subset)	Yes (subset)	Yes (subset)	N/A	N/A	N/A
	GEN-03 DeKAF Genomics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HEART	CTOT-3	Yes (subset)	Yes	Yes	Yes (subset)	No	No	No
	CTOT-5	Yes (subset)	Yes (subset)	No	Yes (subset)	Yes (subset)	Yes (subset)	Flow cytometry
	Stanford/LPCH	Yes	6 month PRA for waitlisted patients	Yes	Yes	No	No	Luminex by C1q and IgG
	CHOP-Heart Tx	Yes	Yes	Yes	Yes	No	No	No
	UPenn-Heart Tx	Yes, from 1999	Yes	Yes	Yes, from 2006	Yes prior to 2003	Yes prior to 2003	Flow beads until 2003
	UCOR	Yes	No	No	Yes from 2006	Yes	No	No
	Madrid Heart Tx Study	No	No	Yes	Yes after 2009	Yes prior to 2009	No	No
	BioVU	Yes	No	No	Yes, since 2005	Yes	Yes until 2009	Flow cytometry
	Rotterdam cohort	No	No	No	Yes	Yes	Yes	Yes
LIVER	CTOT-3	No	No	No	No	No	No	No
	AWISH (CTOT-7)	No	No	No	No	No	No	No
	A2ALL	No	No	No	No	No	No	No
	CHOP-Liver Tx	No	No	No	No	No	No	No
	UPenn-Liver Tx	No	No	No	No	No	No	No
	Baylor-Liver Tx	Yes	No	No	Yes	Yes	No	No
LUNG	LTOG	Yes	Yes	No	Yes	Yes	No	No
	ULTx	Yes	No	No	Yes, from 2006	Yes	No	No
	CTOT-3	Yes (subset)	Yes	No	Yes	Yes	No	No

Table S1/continued: Available pre- and post transplant HLA-related datasets in the iGeneTRaIN cohorts

	Study	HLA-A, -B, - DR mismatch data	Other Class I/II mismatches	Routinely determination of de novo anti-HLA antibodies	De novo anti-HLA antibodies measurements only when rejection is suspected	Registration of post-transplant de novo anti- HLA antibodies	HLA typing data available	Serology	first field level (2- digit)	2nd field level (4-digit)
K I D N E Y	Go-CAR	Yes	No	At study time points post tx	No (but sera available)	At study time points post tx	Yes	Yes	Yes	Yes
	TRANSPLANT-LINES	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
	Vanderbilt BioVU	Yes	Yes, DQ	Yes	Yes	Yes	Yes	No	Yes	Yes, since 2006
	CHOP-Kidney Tx	Yes	Yes, HLA-C, DQ and DP	Yes	No	Yes	Yes	No	Yes	Yes
	UPenn-Kidney Tx	Yes	Yes, HLA-C, DQ and DP	Yes	Yes	Yes	Yes	Yes	Yes	No
	WTCCC-3	Yes (subset)	Yes (subset)	Yes (subset)	Yes (subset)	Yes (subset)	Yes (subset)	Yes (subset)	Yes (subset)	Yes (subset)
	GEN-03 DeKAF Genomics	Yes	No	No	Yes	Yes	Yes	No	Yes (from clinic & from GWAS)	Yes (imputed from GWAS)
H E A R T	CTOT-3	Yes (subset)	C, DQA, DQB, DP (in subsets)	Yes (subset)	Yes (subset)	Yes	Yes	No	Yes	No
	CTOT-5	Yes (subset)	C, DQ, DR51/52	Yes (subset)	Yes (subset)	Yes	Yes	No	Yes	No
	Stanford/LPCH	Yes	C, DQ, DR51/ 52/53, DP	Yes: DSAs at month 3, 6, 9, and 12	DSAs tested when clinically indicated	Yes	Yes	Yes	Yes	Ad-hoc when allele specific Abs are detected
	CHOP-Heart Tx	Yes	Yes, HLA-C, DQ and DP	Yes	No	Yes	Yes	No	Yes	Yes
	UPenn-Heart Tx	Yes	Yes, HLA-C, DQ and DP	Yes	Yes	Yes	Yes	Yes	Yes	No
	UCOR	Yes	No	No	Yes	Yes	Yes	Yes, prior to 1993	Yes, from 1993	No
	Madrid Heart Tx Study	Yes (subset)	No	No	Yes	Yes	Yes (subset)	Yes (subset)	Yes (subset)	No
	Vanderbilt BioVU	Yes	Yes,DQ	Yes	Yes	Yes	Yes	No	Yes	Yes, since 2006
L I V E R	Rotterdam cohort	Yes	No	No	DSA tested when clinically indicated	Yes (subset)	Yes	Yes	Yes	No
	CTOT-3	No	No	Yes (subset)	Yes (subset)	Yes	Yes	No	No	No
	AWISH (CTOT-7)	No	No	No	No	No	No	No	No	No
	A2ALL	No	No	No	No	No	No	No	No	No
	CHOP-Liver Tx	No	No	No	No	No	No	No	No	No
	UPenn-Liver Tx	No	No	No	No	No	No	No	No	No
L U N G	Baylor-Liver Tx	Yes	No	Yes, at year 1	Yes, at year 1	Yes, at year 1	Yes	No	Yes	No
	LTOG	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes
	ULTx	Yes	No	No	Yes	Yes	Yes	Yes, prior to 1993	Yes, prior to 1993	No
	CTOT-3	Yes	C, DQA, DQB, DP (in subsets)	Yes (subset)	Yes (subset)	Yes	Yes	No	Yes	No

Table S2: Concordance between serologically typed HLA alleles and SNP2HLA imputed HLA alleles in UCOR.

	Number of samples (n=)	Concordant samples (%)	Concordant alleles (%)
HLA-A			
2 alleles concordant	285	94.1	96.7
1 allele concordant	16	5.3	
0 alleles Concordant	2	0.7	
Total	303		
HLA-B			
2 alleles concordant	258	93.1	95.8
1 allele concordant	15	5.4	
0 alleles Concordant	4	1.4	
Total	277		
HLA-C			
2 alleles concordant	115	81	89.8
1 allele concordant	25	17.6	
0 alleles Concordant	2	1.4	
Total	142		
HLA-DRB1			
2 alleles concordant	291	92.7	95.5
1 allele concordant	18	5.7	
0 alleles Concordant	5	1.6	
Total	314		
HLA-DQB1			
2 alleles concordant	242	94.2	96.1
1 allele concordant	10	3.9	
0 alleles Concordant	5	1.9	
Total	257		