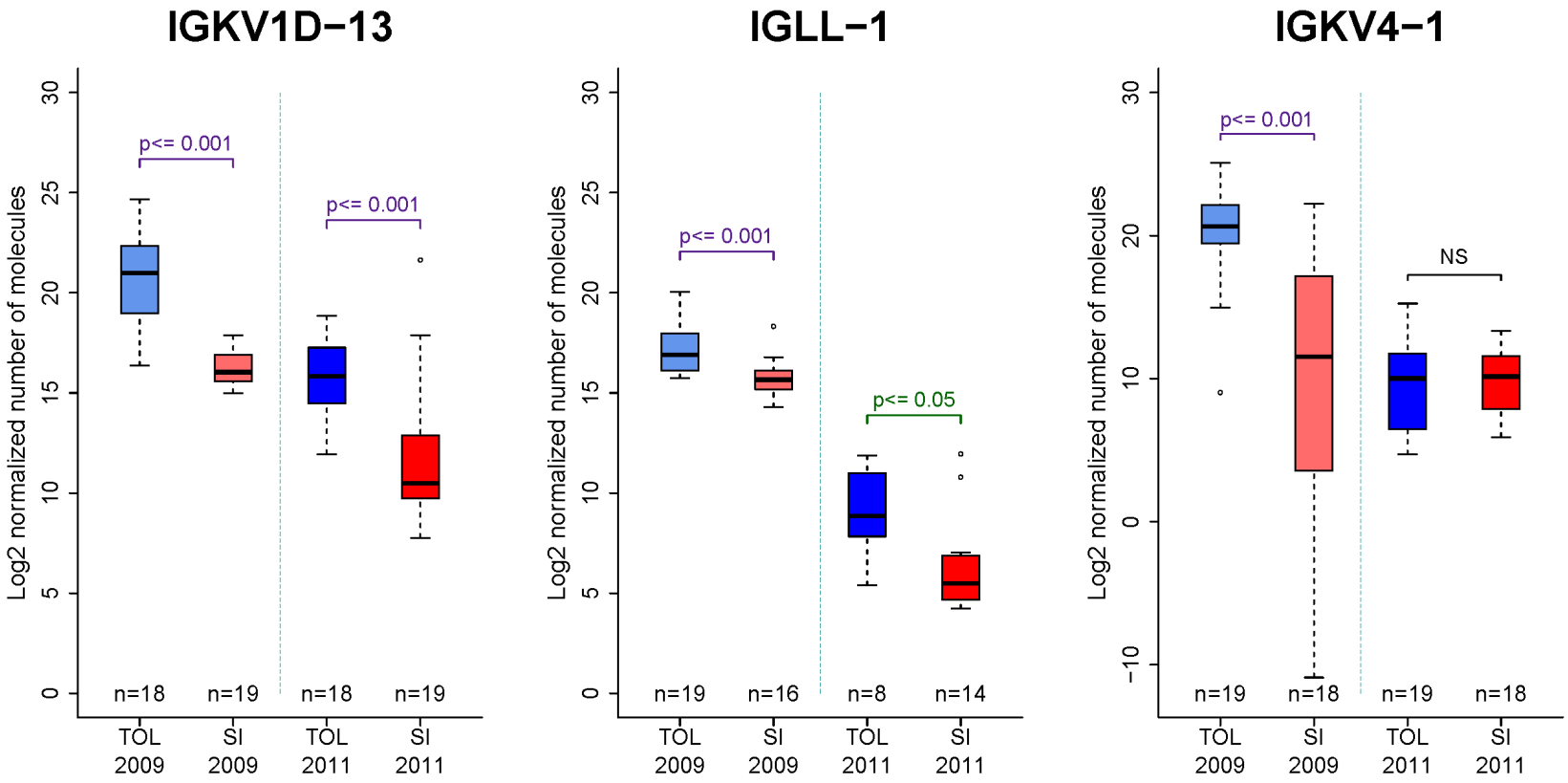
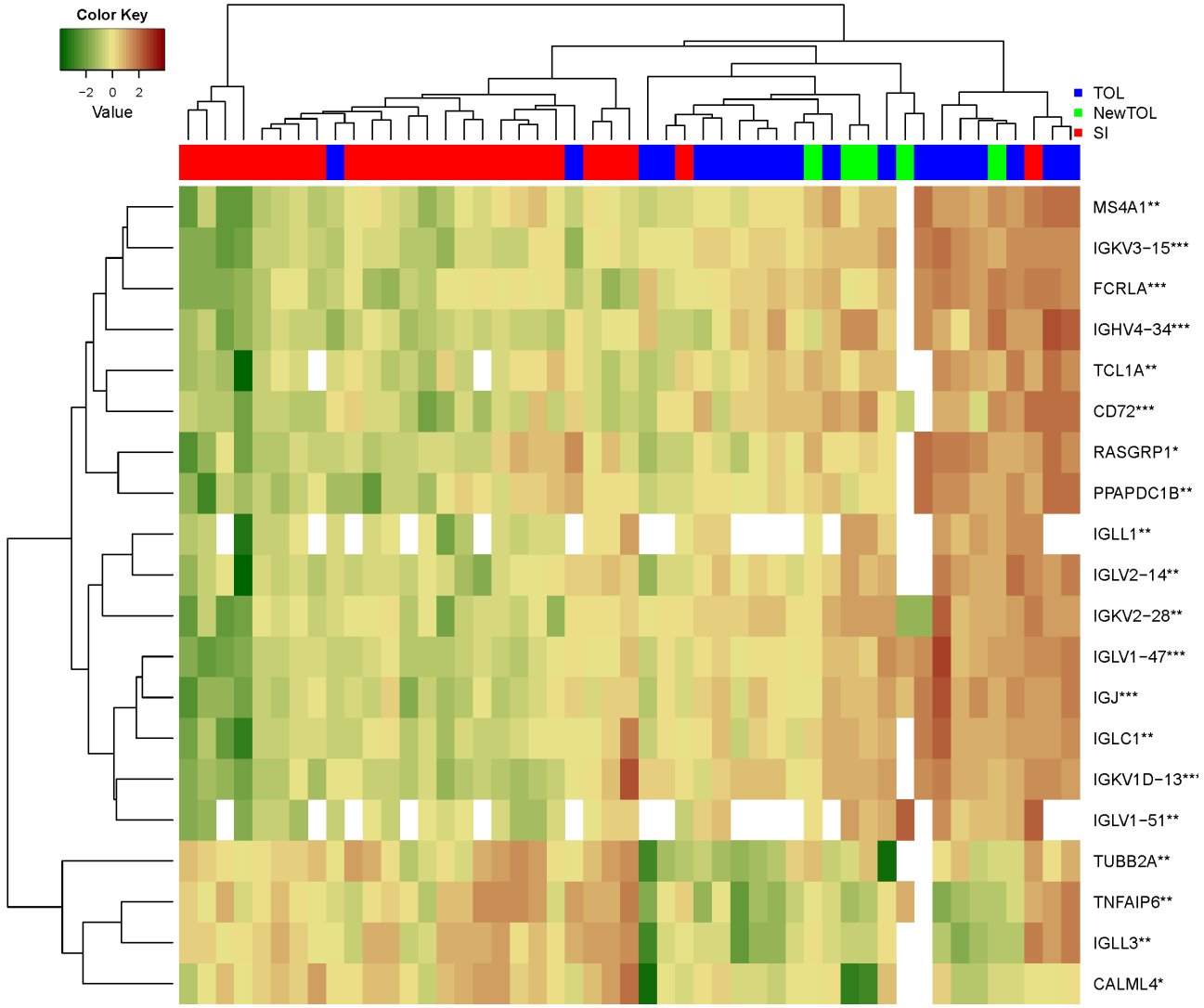


Supplemental Figure S1: Technical reproducibility of Sequenom analysis. The same RNA samples were tested in 2009 and 2011 using Sequenom technology. Fresh reagents were used in 2011, but the same 226 gene multiplex structure was maintained. The difference between TOL and SI samples is clearly reproducible for both IGKV1D-13 and IGLL-1. However, the absolute values are not maintained. https://www.itntrialshare.org/FACTOR_figS1.url



Supplemental Figure 2: Hierarchical clustering using Euclidean distance measure showing the top 20 genes differentially expressed between tolerant, new tolerant and standard immunosuppression participants by t-test with False Discovery Rate (FDR) correction. (* = p-value < 0.05, ** = p-value < 0.005, *** = p-value < 0.001). White or blank cells show values not available due to assay limitations. Fifteen of the 20 genes are B cell specific, the exceptions being RASGRP1, PPAPDC1B, TUBB2A, TNFAIP6, and CALML4.

https://www.itntrialshare.org/FACTOR_figS2.url

Supplemental Table 1
ITN507, ITN013, ITN010, & ITN036 participant specimens analyzed for gene expression, flow cytometry, and BAFF levels analysis

ITN507

Participant	Gene Expression	Flow Cytometry	BAFF Levels
Tolerant			
FACTOR_551339	G		B
FACTOR_841311	G	F	B
FACTOR_150776	G	F	B
FACTOR_944735		F	B
FACTOR_191757		F	B
FACTOR_274363		F	B
FACTOR_712246	G		B
FACTOR_919105	G		B
FACTOR_681387	G	F	B
FACTOR_948987	G	F	B
FACTOR_987079	G	F	B
FACTOR_808379	G	F	B
FACTOR_701789	G	F	
FACTOR_402941	G	F	
FACTOR_579210		F	
FACTOR_911411	G	F	B
FACTOR_909034	G	F	B
FACTOR_231375	G	F	B
FACTOR_679149	G	F	
FACTOR_157168		F	
FACTOR_118518	G	F	
FACTOR_238870			B
FACTOR_974351	G	F	B
FACTOR_208304	G	F	B
FACTOR_541582	G	F	B
New Tolerant			
FACTOR_882447	G	F	B
FACTOR_833683	G	F	B
FACTOR_465810	G	F	B
FACTOR_645626	G	F	B
FACTOR_243751	G	F	B
FACTOR_377176		F	B
FACTOR_690732			B

ITN507

Participant	Gene Expression	Flow Cytometry	BAFF Levels
Standard Immunosuppression			
FACTOR_662711	**G**	**F**	**B**
FACTOR_553478	**G**		**B**
FACTOR_583976	**G**	**F**	**B**
FACTOR_143335	**G**	**F**	**B**
FACTOR_532410		**F**	**B**
FACTOR_743013	**G**		**B**
FACTOR_445323	**G**	**F**	**B**
FACTOR_908887	**G**		
FACTOR_505880	**G**	**F**	
FACTOR_671619	**G**	**F**	
FACTOR_249795	**G**	**F**	
FACTOR_212280		**F**	
FACTOR_762897	**G**	**F**	**B**
FACTOR_193782	**G**	**F**	
FACTOR_109622		**F**	**B**
FACTOR_213935		**F**	
FACTOR_278451	**G**	**F**	**B**
FACTOR_245217	**G**		**B**
FACTOR_418828		**F**	**B**
FACTOR_405881	**G**	**F**	**B**
FACTOR_700990	**G**	**F**	
FACTOR_982795		**F**	
FACTOR_936912		**F**	
FACTOR_930968	**G**	**F**	
FACTOR_930960		**F**	
FACTOR_850120	**G**		
FACTOR_439639	**G**	**F**	
FACTOR_486391	**G**		
FACTOR_553535	**G**		
FACTOR_884046	**G**	**F**	**B**
FACTOR_573541	**G**		**B**
FACTOR_853380	**G**	**F**	
FACTOR_205722		**F**	**B**
FACTOR_432603	**G**	**F**	**B**

ITN013

Participant	Gene Expression
Sirolimus Monotherapy	
ITN013ST_877664	**G**
ITN013ST_597519	**G**
ITN013ST_187319	**G**
ITN013ST_371019	**G**
ITN013ST_307165	**G**
ITN013ST_805828	**G**
ITN013ST_561464	**G**
Standard Immunosuppression Multiagent	
ITN013ST_145787	**G**
ITN013ST_492821	**G**

ITN010 & ITN036

Participant	Gene Expression
Tolerant	
ITN036ST_968123	**G**
ITN036ST_456317	**G**
ITN036ST_464831	**G**
ITN010ST_14804	**G**
ITN010ST_564051	**G**
ITN010ST_687298	**G**
ITN010ST_93464	**G**
Return to Standard Immunosuppression	
ITN036ST_264166	**G**

Assay Combination Legend:

(G) Gene Expression

(F) Flow Cytometry Analysis

(B) BAFF Levels

Supplemental Table 2
232 genes of interest tested by gene expression (including six housekeeping genes)

Gene No.	Multiplex Gene ID											
	W1	**W2**	**W3**	**W4**	**W5**	**W6**	**W7**	**W8**	**W9**	**W10**	**W11**	**W12**
1	PLOD3	IGLL1	AKR1C3	MRPS31	IGHV4-34	TSPAN5	EIF5AP1	IGLV1-47	TBC1D5	IL23A	PLDN	TUBB3
2	SMAD5	BCL2L1	CD55	IGF2BP2	BLNK	KV105_HUMAN	MAFG	SWAP70	HLA-C	ZNF331	RAD21	IGKV3-20
3	TGM2	IGLV1-51	BCL11A	MGC33894	GAS7	RBPMS	TBB3_HUMAN	FCRLA	TAOK2	FAM129C	PLAUR	TNF
4	BMP7_HUMAN	IL10	BLM	MATK	FOXO1	IGKC	RAP2A	CYP1B1	RAD52	IGHG2	KLRC1	TRDC
5	LOXL2	TGFBR1	BACH2	MSL-1	IL8	STAP1	PHCA	IGKV1-27	SHMT2	BIRC3	PCDHGC5	GPBAR1
6	LOXL1	TGFB2	BBX	IKZF3	CXXC5	IGKV2-28	STRBP	EIF5B	IGKV2-24	DHX9	HLA-C_2	VPREB3
7	PLOD1	TGFB1	BTLA	IL-1	NFATC4	SPTB	PML	PPAPDC1B	HLA-DOB	DDHD2	F3	
8	SMAD6	HAVCR2	BTLA_2	MLTK_HUMAN	ARID5B	LRRFIP1	SDC4	MS4A1	SLC12A8	IGKV1-12	WDR67	
9	PDGFA	IL6	BCL11A_2	MIB1	FZD4	AFF3	RELB	RASGRP1	TCL1A	RAD50	IGHD	
10	EDN1	CD3E	FNBP2	CD38	UPP1	SFRP2	RHOH	IGKV3-15	ROCK1	Klrk1	PPP3CA	
11	SMAD7	TGFBR3	CXCL3	RPL14	KCNJ2	USP34	SLAMF7	GPR114	DEFA4	CALML4	ICAM1	
12	CTGF	PECAM1	EBI2	NFAT5	PDE4B	PPAPDC1B_2	IGLL3	KIAA0746	SLC2A3	DYHC	IGHM	
13	LOX	TGFB3	CDK6	MEF2C	PTCH1	CD72	SESTD	SON	TSPAN3	KLRB1	YWHAE	
14	FGF2	IFNG	CXCL4	PALM2	KLRC2	CXCL1	RPS6	C9orf45	TRA2A	IRF-4	UBC	
15	HGF	TBX21	BMP6	NBPF16	ZBTB10	GFOD2	RAB38	IGKV4-1	USP10	ESPN	OR13C4	
16	SPG3A	TGFBR2	CD79B	NFKB2	CUGBP1	CXCL2	SMURF1	IGLC1	IGLV2-14	PPP1R12A	NR4A3	
17	SMAD3	HAVCR1	KLRD1	P2RX5	RAB5C	TPD52	TUBB2A	ADARB1	CD160	MS4A1_2	ZNF295	
18	PLOD2	CD40	CXorf38	SPEN	IGKV1D-13	CEP350	TSPAN13	ATRX	GNA11	SF3B1	IGHA1	
19	SMAD1	SPIB	EIF2S1	ZNF267	JAK1	NKG2F_HUMAN	SH2D1B	IGJ	TUBB4	RAB2A	POLR3H	
20	SMAD2	IL2RA	FEZ1	PTGDR	SYNPO2L	CCL20	TNFAIP6	SAMD9L	BACH2_2	KLRC3	IGKV1-33	

Housekeeping genes: GAPDH, UBC, HPTR1, TBP, B2M, YWHAZ

Supplemental Table 3

Intersection of statistically significant genes comparing SI vs. TOL in the current experiment and Newell KA et al., J Clin Invest. 2010

Gene	Number of SI in current exp.	Number of TOL in current exp.	p-value in current exp.	Number of SI in Newell et al. 2010	Number of TOL in Newell et al. 2010	p-value in Newell et al. 2010
ADARB1	24	19	0.0127	23	19	0.0125
ARID5B	24	19	0.0013	23	18	0.0109
BACH2_2	24	19	0.0310	24	18	0.0129
BLNK	24	19	0.0079	23	19	0.0193
EBI2	24	19	0.0160	24	18	0.0087
FCRLA	24	19	<0.001	22	18	<0.001
FOXO1	24	19	0.0041	24	19	0.0097
IGHA1	24	18	0.0173	24	19	0.0018
IGHD	24	19	0.0211	20	19	0.0051
IGHV4-34	24	19	<0.001	24	19	<0.001
IGJ	24	19	<0.001	24	19	<0.001
IGKC	24	19	0.0216	24	19	<0.001
IGKV1-27	23	19	0.0106	24	19	0.0023
IGKV1D-13	24	19	<0.001	19	18	<0.001
IGKV2-28	24	19	<0.001	11	16	0.0181
IGKV3-15	24	19	<0.001	11	17	0.0219
IGKV3-20	24	18	0.0025	24	19	<0.001
IGLC1	24	19	<0.001	24	16	0.0014
IGLL1	19	8	0.0011	16	19	<0.001
IGLV1-47	24	19	<0.001	24	19	0.0136
KIAA0746	24	19	0.0056	21	18	0.0102
KV105_HUMAN	24	19	0.0116	24	19	<0.001
MS4A1	24	19	0.0013	24	19	<0.001
MS4A1_2	24	18	0.0133	23	18	<0.001
PLAUR	24	18	0.0121	24	19	0.0321
PPAPDC1B	24	19	<0.001	22	19	0.0014
PPAPDC1B_2	24	18	0.0141	19	17	0.0102
PTCH1	24	19	0.0199	23	19	0.0269
STAP1	24	18	0.0030	20	18	0.0042
SWAP70	24	19	0.0043	24	19	0.0095