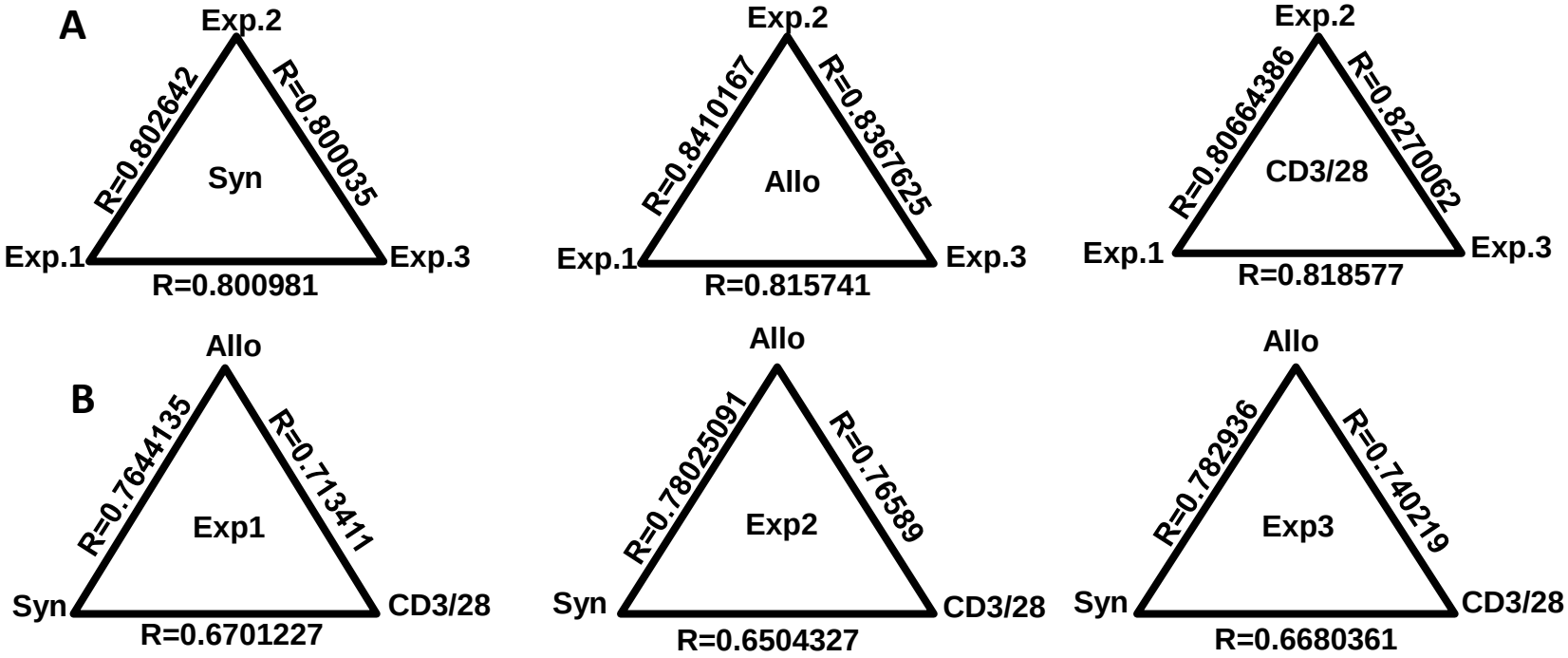
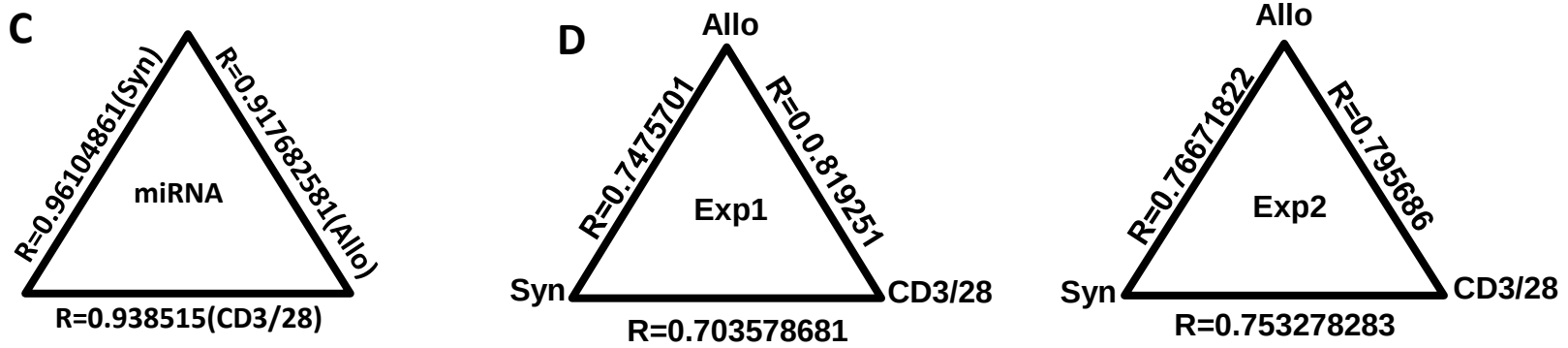
Supplemental Table 1. 3 types of signals that are involved in T cell activation

	Syn-T cells	Allo-T cells	CD3/28- T cells
First signal MHC-TCR-CD3 pathway	Not engaged	MHC-alloantigen-TCR-CD3 Engaged	CD3-Engaged
Second signal Co-stimulatory molecules	Not sure	CD28, CTLA4, ICOS, OX40, CD30, CD153	CD28 signaling
Third signal cytokines	Not sure	Cytokines from Allo-DCs and Allo-T cells	Cytokines from CD3/28-T cells

Supplementary Figure 1 Pearson Correlation Coefficient R



Pearson Correlation Coefficient R for 9 biological replicates for affymatrix microarrays



Pearson Correlation Coefficient R for 6 biological replicates for miRNA microarrays

Supplementary Table 2 .Enrichments of Transcripts differentially Increased in Allo- T cells

Symbol	Fold Ch. (Log)	Symbol	Fold Ch. (Log)	Symbol	Fold Ch. (Log)	Symbol	Fold Cha.(log)	Symbol	Fold Ch.(Log)
Alg8	2.060308	Cpsf6	1.22965	Arl6ip6	1.145309	5730471H19Rik	1.081846	Gmfb	1.029386
Melk	1.980582	Pno1	1.22959	C80350	1.143319	Grsf1	1.081728	Psmb7	1.028187
Eif3j	1.939782	BF228097	1.22056	Eif4a1	1.13752	Lmnb1	1.073975	Gltp	1.027779
Rg9mtd2	1.81345	Oxnad1	1.20962	Appbp2	1.137063	Senp1	1.073847	Fundc2	1.0272
Plk4	1.791148	BF228097	1.20522	Prkaca	1.136359	Psmd6	1.072738	Narfl	1.026824
Ikzf4	1.759402	Acp1	1.19909	Med28	1.129757	Hn1	1.072215	Aldh9a1	1.023497
Rbmx2	1.751609	BB728878	1.19583	Rnf219	1.128889	Vapa	1.070151	Hspd1	1.021761
Cep55	1.695522	Ccnj	1.19543	BC011499	1.128278	Cyp20a1	1.069918	Sumo1	1.021134
Taf1d	1.680666	Gsto1	1.1935	Snx5	1.126479	Eif4ebp1	1.069902	Dnmt1	1.019732
Car12	1.593412	Cldnd1	1.19101	Mcm2	1.125266	Hopx	1.067637	Slc30a7	1.017321
BM934830	1.583283	Trim37	1.18705	Uhrf1	1.125048	Adpgk	1.06675	Aagab	1.015194
Kif18b	1.496923	Slc38a1	1.1841	Bzw1	1.117773	Btf3	1.061956	Drg1	1.014896
AV155488	1.478698	Arl6ip6	1.18063	Camkk2	1.114847	Styx	1.060216	Eif1ax	1.014508
Psma5	1.441271	Mcm5	1.18048	Vps25	1.113808	Snrpd1	1.049015	Ttf2	1.014028
Mcm7	1.384297	Prkrir	1.17938	Azin1	1.113071	Hadh	1.046742	Snhg1	1.013278
Rps3	1.38057	AK002902	1.17549	4932431P20Rik	1.112251	Ppil1	1.045864	Zranb2	1.013087
Ccdc23	1.377602	Entpd6	1.17401	D17Wsu104e	1.107189	Tmem49	1.043791	Isoc1	1.012302
1110059G02Rik	1.33538	Tmem206	1.17359	Seh1l	1.105186	Sts	1.04242	Zbed4	1.011346
BM225255	1.308311	BC003788	1.17277	Dynll2	1.103297	Snx5	1.042211	Icos	1.009592
Sik3	1.306109	BM225255	1.16971	Mbnl3	1.102231	Vipar	1.041205	BB144971	1.006445
Pgk1	1.303941	Atmin	1.16244	Ppp3cc	1.09815	BG077348	1.040409	Psmd8	1.00597
Ap1g1	1.299406	Dlat	1.16196	Bcap29	1.097757	Mta2	1.040302	2610024G14Rik	1.005138
Cul5	1.263582	AV110784	1.15946	Hibadh	1.097527	Mtif3	1.039936	Tmem126a	1.002926
Yars2	1.26038	BB751093	1.15944	Vdac1	1.096555	Egr2	1.038783	Mcm7	1.000529
C1qbp	1.252782	Gtpbp10	1.15725	Mex3c	1.092194	AI597479	1.038558		
Pgk1	1.244224	Fam120a	1.1529	BC002257	1.090886	Tmem69	1.035169		
Cebpg	1.243272	E430014B02Rik	1.15107	Mcart1	1.083001	Raly	1.034162		

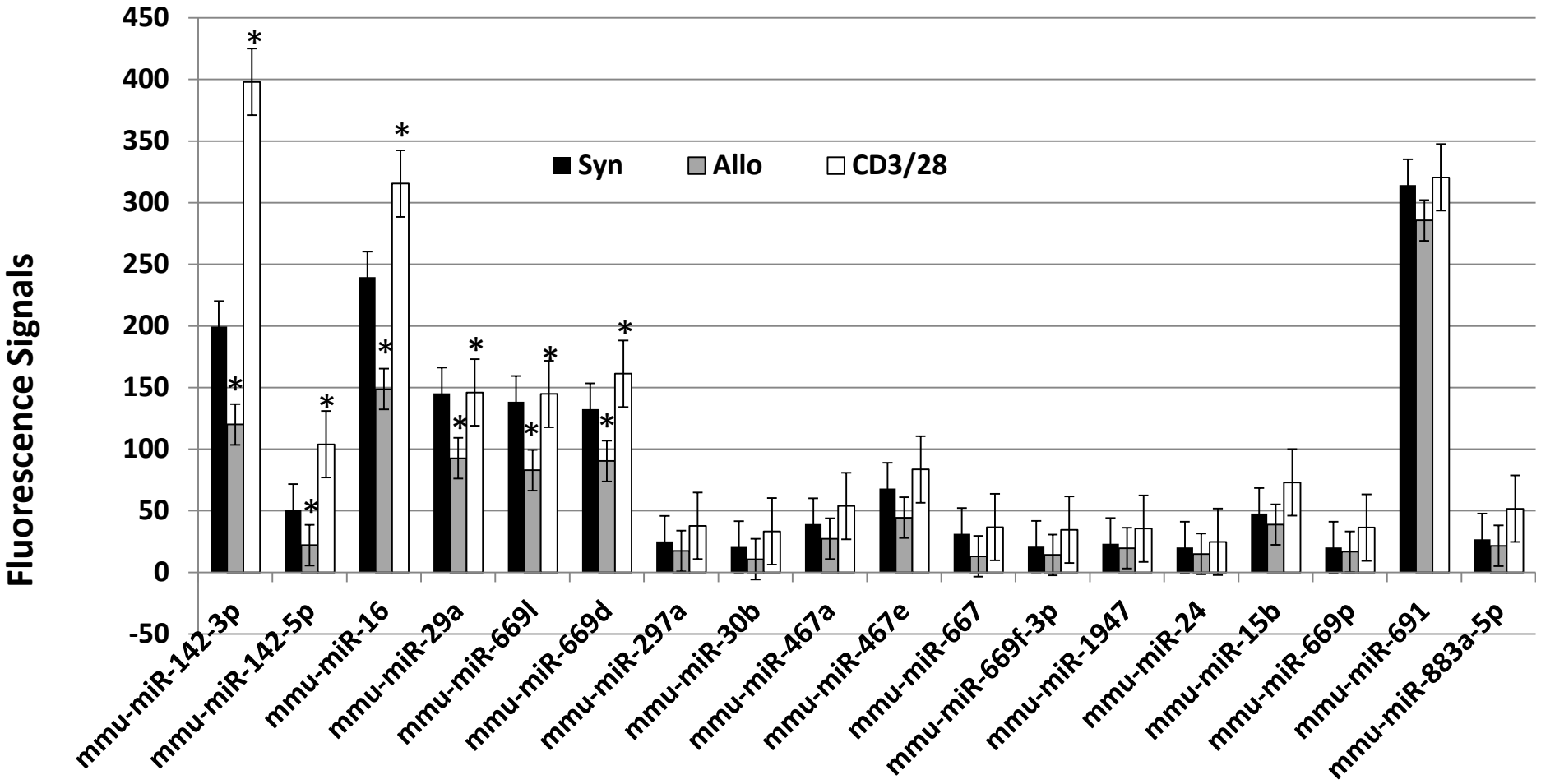
Supplementary Table 3 Enrichments of Transcripts differentially Increased in CD3/28 antibody-activated T cells

Symbol/Acc. Num	Fold Ch. (Log)	Symbol/Acc. Num	Fold Ch. (Log)	Symbol/Acc. Num	Fold Ch. (Log)	Symbol/Acc. Num	Fold Ch.(Log)	Symbol/Acc. Num	Fold Ch.(Log)
Lypla1	1.596454	Imp4	1.165755	Gosr2	1.096668	Rpa2	1.065184	AK004568	1.037037
Pycrl	1.48934	Pms2	1.164373	Mrpl2	1.095905	Pmpca	1.064972	BB145140	1.034741
AI551874	1.45258	Gar1	1.159604	Eif2b1	1.094836	Ndufab1	1.064372	Agpat3	1.030875
NM_009082	1.367504	Siva1	1.159376	Psmc3ip	1.093395	Bzw1	1.062975	Cct2	1.029633
NM_009119	1.356857	Exosc1	1.15936	AA690930	1.089619	2700094K13Rik	1.062719	H2afz	1.028257
Nol9	1.34478	Dbi	1.15177	Thoc4	1.089041	Pppde2	1.062719	1700037H04Rik	1.027874
Cltb	1.344765	Zwilch	1.150608	Spna2	1.08845	Nfkbid	1.062338	Ptges2	1.027792
Gtf2e2	1.313391	Bola2	1.145338	Cad	1.088188	Cdc23	1.061264	NM_023119	1.027457
Pfkl	1.304789	Ndufv1	1.141496	Mpp6	1.087577	Naa10	1.060359	Gfod1	1.026122
AI414989	1.303586	Tsr2	1.141269	Pgk1	1.086831	Arf1	1.059623	Anapc5	1.02482
Aars	1.27787	Tmem167	1.138786	Tmem109	1.086313	Ndufs8	1.058682	Mrpl32	1.024699
Slc25a4	1.277711	Hspe1	1.135949	Snrpg	1.083866	Gnl3	1.05658	Tacc3	1.024568
0610012G03Rik	1.259882	Pus1	1.131414	BB811478	1.083639	Psmd6	1.056489	Noc4l	1.02373
Acot7	1.247454	Gapdh	1.131267	Rad51ap1	1.081713	E2f2	1.055445	Prdx6	1.022885
Rgs16	1.240074	Cdt1	1.130203	Ece2	1.081283	Pfdn2	1.053224	Slc25a4	1.018387
Mrps10	1.235494	Mcm7	1.130149	BG065620	1.080868	Eif4e	1.053202	Nudt1	1.016331
C80350	1.23323	Wdr36	1.129897	Etfb	1.079918	Pabpc4	1.050804	Set	1.013561
NM_010948	1.231322	Banf1	1.129473	Nhp2	1.07987	Wars	1.050489	Ube2v1	1.011275
Paxip1	1.200915	Rps18	1.127725	Tomm5	1.075241	Fam162a	1.050284	Me2	1.008857
Chtf18	1.199781	Surf4	1.122186	C79407	1.074419	Rpf2	1.049681	AI893877	1.007658
Eef1d	1.197358	Sephs1	1.120616	Phpt1	1.074085	NM_008787	1.046895	L3mbtl2	1.006212
Mrpl12	1.194039	Ndufs8	1.113868	Dbi	1.073291	Pcbp1	1.04652	Cox5b	1.002666
Psmc3ip	1.190073	Mrpl15	1.110926	Polr2j	1.0726	BG077348	1.045676	Coro1c	1.001668
Ppp1r14b	1.188978	Etfa	1.107261	Mtap	1.071897	Mthfd1	1.044188		
Mrps22	1.186383	Synpo2l	1.098951	Dusp4	1.070336	Aprt	1.043453		
Cct3	1.18008	2610027L16Rik	1.09776	Dusp5	1.066241	Mad2l2	1.037168		

Supplementary Table 4 Enrichments of Transcripts differentially reduced in CD3/28 T cells

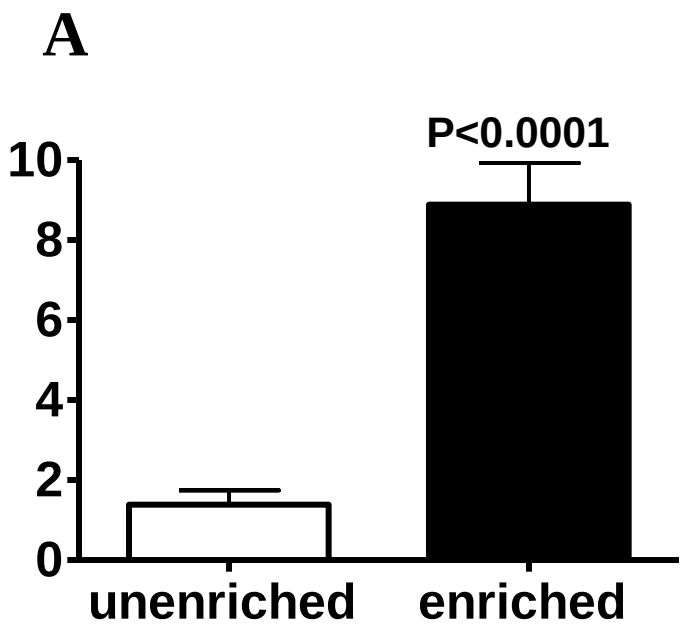
Symbol	Fold Ch. (Log)	Symbol	Fold Ch. (Log)	Symbol	Fold Ch.(Log)	Symbol	Fold Ch.(Log)	Symbol	Fold Ch.(Log)
Igk-V1	-1.63971822	Stxbp5	-1.18819	Myst2	-1.1294	Pde7a	-1.06819	AW559011	-1.02788
Hsd17b4	-1.58317823	Trim34	-1.18709	Ncor1	-1.12876	Dis3l	-1.06704	Tsc1	-1.02695
BC013496	-1.55967109	Stxbp3a	-1.18419	Ikbkb	-1.12813	Cd74	-1.06605	Hsdl1	-1.02404
Rnf146	-1.55445289	Pfn2	-1.18412	Rgs2	-1.12794	Kcnk6	-1.06543	Srsf6	-1.02302
Rbm16	-1.54092405	Helb	-1.18315	AI987967	-1.12604	Kat2b	-1.06441	Bcl6	-1.02276
AV057155	-1.48586401	H2-Ob	-1.18279	Tmx4	-1.12373	4932438A13Rik	-1.05759	Ccpg1	-1.02168
Slc4a7	-1.48190891	Atp2b1	-1.18237	Acbd5	-1.11983	Ap3m2	-1.05594	Clcn4-2	-1.02016
Tspo	-1.44397731	Prkacb	-1.18093	Pcf11	-1.11863	Pja1	-1.0557	Bcl3	-1.01945
Zcchc3	-1.38606786	Trpm7	-1.1768	Zfp62	-1.11813	1600012H06Rik	-1.05445	Litaf	-1.01685
Cd24a	-1.37971791	Mgst2	-1.17279	BB414617	-1.11754	Pde4b	-1.05438	Srgap2	-1.01445
Grina	-1.36027963	Smad4	-1.17079	Rnf213	-1.11548	Cep350	-1.05427	Pyhin1	-1.01433
Kdm3b	-1.34424198	Als2cl	-1.16913	AJ249492	-1.11265	Tgoln1	-1.05171	Sdad1	-1.0143
Dnase2a	-1.33373608	Nol8	-1.16643	Fez2	-1.11245	AV220340	-1.05125	Spsb1	-1.01303
5730601F06Rik	-1.33055856	Rock1	-1.16559	Mfge8	-1.10668	C130039O16Rik	-1.04453	4933426M11Rik	-1.01261
Lasp1	-1.33037007	Zfml	-1.16445	C2cd3	-1.10236	Tug1	-1.04254	D930015E06Rik	-1.01038
Slc2a3	-1.3225484	Tbk1	-1.16288	Ddx58	-1.10178	Ddx59	-1.0416	Pcnx	-1.01016
Vps13d	-1.31706502	Fbxo22	-1.16288	Zbtb25	-1.10141	Cflar	-1.0403	Entpd5	-1.00909
Srsf8	-1.31607075	Nrip1	-1.15857	Oxr1	-1.1014	P4ha1	-1.0402	Psap	-1.00868
2310035C23Rik	-1.2922489	Tspo	-1.15814	Creb3	-1.10098	Bmp2k	-1.04002	Smg1	-1.00798
Jak1	-1.29089149	Marcks	-1.15573	Rnf185	-1.09457	Glt8d1	-1.03924	Jak1	-1.00719
Wdr92	-1.28901879	Arid4a	-1.15513	Sptlc1	-1.09277	Ccndbp1	-1.03827	Nsd1	-1.00571
Tbc1d4	-1.26777748	Dnajb9	-1.15076	Cnot4	-1.09103	Arhgap4	-1.03799	Add3	-1.00495
Tor1aip1	-1.25884692	H2-Eb1	-1.14949	Cpne3	-1.09082	Zfp260	-1.03713	Smarcc2	-1.00471
BI107286	-1.25070246	AK008551	-1.14554	Prex1	-1.09019	Ehd3	-1.03548	Atf7ip	-1.00346
Rapgef4	-1.24795705	4933433P14Rik	-1.14161	Snap23	-1.09018	Plxnc1	-1.03543	Ppp1r12a	-1.00233
Pisd-ps3	-1.24664939	Tmem106b	-1.13804	Myst3	-1.08365	BB115902	-1.0334	1190002H23Rik	-1.00137
Uhrf1bp1l	-1.23684719	Whsc1l1	-1.1372	Skap2	-1.08192	Ifit3	-1.03274	Gimap5	-1.00121
Ddx46	-1.22396951	Phf3	-1.13654	Zeb1	-1.08101	Ash1l	-1.03177	Pds5b	-1.0008
Rbm33	-1.21728656	Whsc1l1	-1.13512	Mettl9	-1.07686	Sh3gl1	-1.03117	Adm	-1.00074
Asxl2	-1.21254492	Tlr6	-1.13303	Gpr183	-1.0767	Mfsd6	-1.03028		
Ndrg1	-1.20441659	Herc2	-1.13268	Plec	-1.07597	Wipf2	-1.02931		
Nbr1	-1.20183101	Atp2b1	-1.13055	Limd1	-1.07298	Igf1r	-1.02902		
Zfp53	-1.19895557	Slc39a9	-1.12942	2810474O19Rik	-1.07122	Pstk	-1.02821		

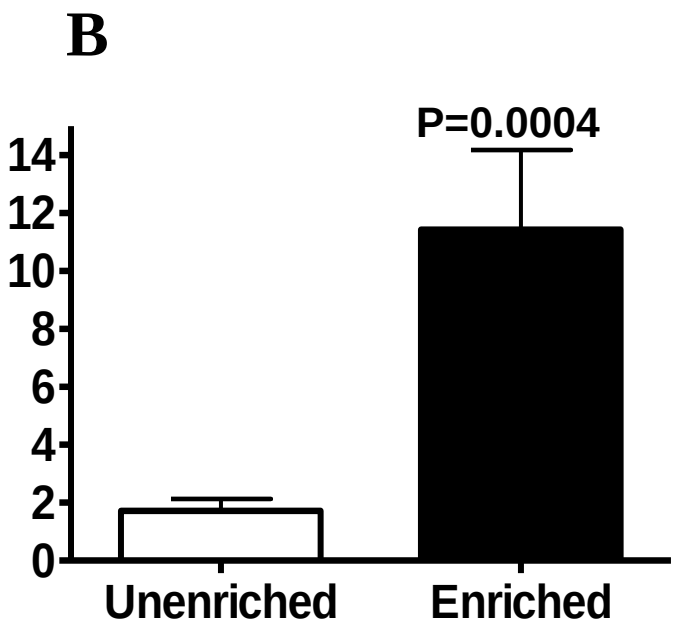
Supplementary Figure 2



Supplementary Figure 2: Selection of differentially enriched miRs from CLIP chip We focused on the miRs in group 3, which's enrichments were differentially changed in Allo- T and Ab-T cells compared with that in Syn- T cells. It reflected the distinct features for immune response, Allo-reaction versus non-specific reaction. 6 miRs out of the 18 showed significantly changed enrichments after CLIP and were selected for further analysis.
*p<0.01

Supplementary Figure 3 Target Prediction Frequencies





Target Prediction for the transcripts with reduced enrichments in Allo-T cells by miRs enriched in group 3 or unenriched miRs as in Supp-table 10)

Target Prediction for the transcripts with increased enrichments in Allo-T cells (Supp table 2) and miRs in group 2 (Supp table 11) or unenriched miRs as in supp table 12)

Supplementary Table 5 Frequency of targeting between miRNA s in Group 3 and transcripts in Allo-enrichment reduced after CLIP

Number of Targeting miRNAs	Frequency (Total 50)	Name of targeted transcripts
9	2% (1)	Il6st
8 up to 9	4% (1)	Cbx7
7 up to 9	10% (3)	Mll3, Med17, Rsrc2
6 up to 9	22% (5)	Synj1, 4933433P14Rik, Cd200r1, Ctdsp1, Zfp622,
5 up to 9	38% (8)	Akap9, Ankrd17, Dock9, Rnf185, Nub1, Ing1, Narf, Mmp15
4 up to 9	56% (9)	Wapal, Bat2, Cyb5r3, Ifngr2, Ifi203, Lipa, Ccdc55, Lrrfip1, Itm2c
3 up to 9	74% (9)	Brd8, C87436, Terf2ip, Tgs1, LPP, Itpr1, Rcor1, L3mbtl3, Fchsd2
2 up to 9	86% (5)	Akap8, Cabin1, Nfyb, Sirt7, Yipf1,
1 up to 9	100% (9)	Atp1a1, Clk3, Cyth3, Flot2, Hsd17b4, Prf1, Ptpra, Rab24 , Crnkl1

Supplementary Table 6 Targeted transcripts in Allo-T cells which's enrichments are uniquely reduced after CLIP (table 1) by randomly selected un-enriched miRNAs

Randomly selected unenriched miRNAs	Targeted transcripts in Allo-T cells which's enrichments are uniquely reduced after CLIP (table 2)	Number of targets
Mmu-miR-181a	4933433P14Rik, Mll3, Cbx7,	3
Mmu-miR-223	Ankrd17, Mll3, Il6st,	3
Mmu-miR-744		0
Mmu-miR-32	Dock9, Itpr1,	2
Mmu-miR-451		0
Mmu-miR-27b	Ankrd17, Rsrc2, Mll3, Brd8,	4
Mmu-miR-10		0
Mmu-miR-221	AI314180, Nfyb,	2
Mmu-miR-125b-5p	Flot2, Sirt7,	2
Mmu-miR-105	Itpr1,	1
Mmu-miR-122		0
Mmu-miR-134		0
Mmu-miR-136		0
Mmu-miR-137		0
Mmu-miR-145	Dock9,	1
Mmu-miR-149		0
Mmu-miR-152	Mmp15, Sirt7, Il6st,	3
Mmu-miR-182	Dock9, Ctdsp1, Rcor1, Cbx7,	4

Supplementary Table 7 Targeted transcripts in Allo-T cells which's enrichments are uniquely increased after CLIP (Supplementary table 2) by enriched miRNAs in group 2

miRNA Name	Targeted transcripts in Allo-T cells which's enrichments are uniquely increased after CLIP (supplementary table 1)
Mmu-miR-709	Rg9mtd2, Cep55, Car12, Rps3, Cebpg, Trim37, Slc38a1, Mcm5, Prkrir, Entpd6, Tmem206, Dlat, Med28, Azin1, Mbnl3, Mcart1, Senp1, Gltp, Aldh9a1, Zranb2,
Mmu-miR-374	Eif3j, Rg9mtd2, Plk4, Cep55, Car12, Rps3, Cul5, Cpsf6, Arl6ip6, Tmem206, Atmin, Arl6ip6, Mbnl3, Mex3c, Styx, Tmem69, Gmfb, Fundc2, Zranb2,
Mmu-miR-204	Car12, Rps3, Oxnad1, Ccnj, Tmem206, Atmin, Dynll2, Mbnl3, Cyp20a1, Mta2, AI597479,
Mmu-miR-1958	Eif3j, Slc38a1, Mta2
Mmu-miR-1897-5p	Cpsf6, Slc38a1, Raly, Gmfb
Mmu-let-7e	Rg9mtd2, Acp1, Ccnj, Prkaca, Med28, Snx5, Bzw1, Vps25, Mbnl3, Bcap29, Vdac1, Hn1, Styx, Hadh, Tmem49, Snx5, Fundc2,
Mmu-miR-3081	Pgk1, Cul5, Pgk1, Senp1, Ppil1, Isoc1,

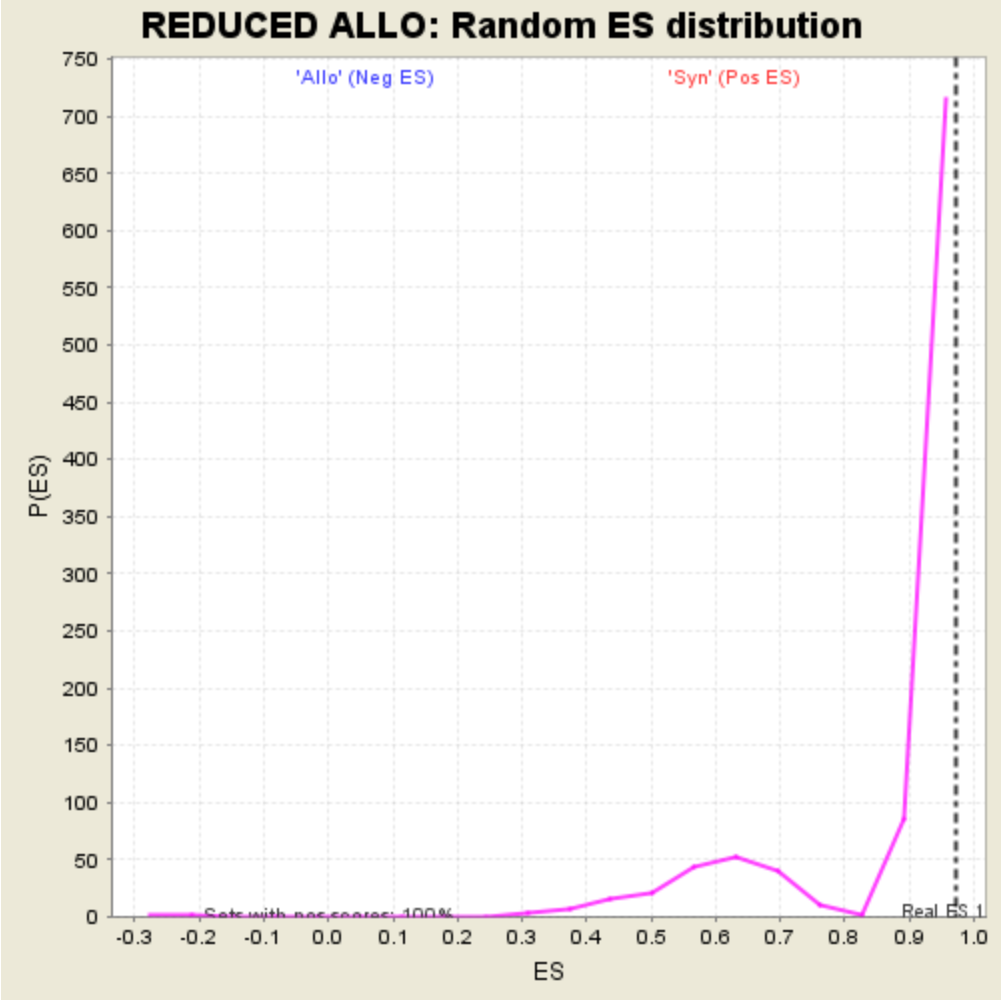
Supplementary Table 8 Targeted transcripts in Allo-T cells which's enrichments are uniquely increased after CLIP (supplemental table 2) by randomly selected Un-enriched miRNAs

Randomly selected Un-enriched miRNAs	Targeted transcripts in Allo-T cells which's enrichments are uniquely increased after CLIP (supplemental table 1)	Number of Targets
Mmu-miR-181a	Ccnj, Entpd6, Senp1,	3
Mmu-miR-223	Styx,	1
Mmu-miR-744		0
Mmu-miR-9	Ikzf4, Grsf1, Adpgk.	3
Mmu-miR-451	Mex3c,	1
Mmu-miR-10	Eif3j, Mbnl3,	2
Mmu-miR-221	Eif3j, Styx,	2

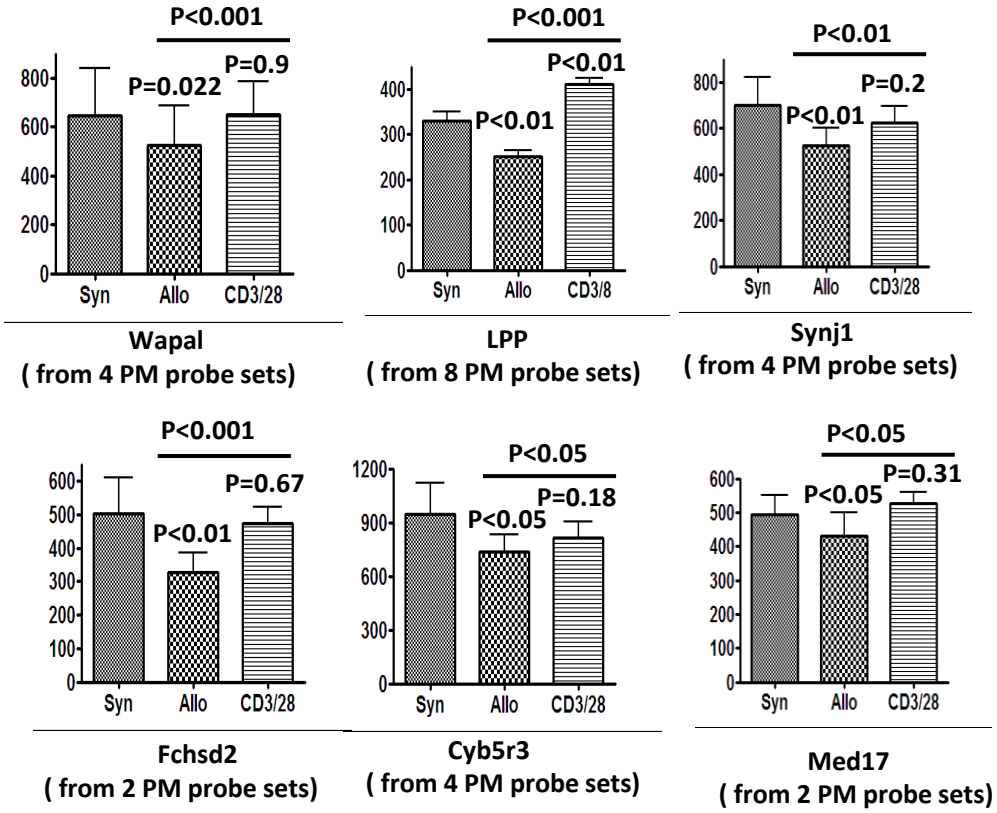
Supplementary Table 9: GSEA Results Summary

Dataset	**Ago-CLIPCHIP. Syn-Allo.cls#Syn_versus Allo**
Phenotype	**Syn versus Allo**
“Upregulated” in class	**Syn**
GeneSet	**ENRICHMENTS REDUCED ALLO**
Enrichment Score (ES)	**0.97343034**
Normalized Enrichment Score (NES)	**1.0980797**
Nominal p-value	**0.13640922**
FDR q-value	**0.13640922**
FWER p-Value	**0.136**

Supplementary Figure 4

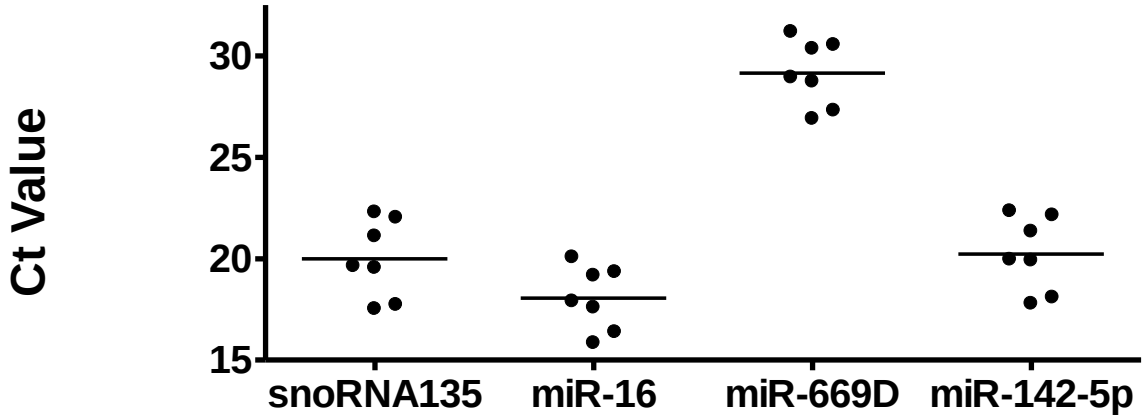


Supplementary Figure 5



Supplementary Figure 5 Validation of predicted genes with pooled transcripts from CLIP-chip To avoid single transcript positively selected by analysis algorithms, all transcripts detected by perfect match (PM) probset for the predicted 6 genes were extracted and pooled for analysis. The results were consistent with Affymetrix report.

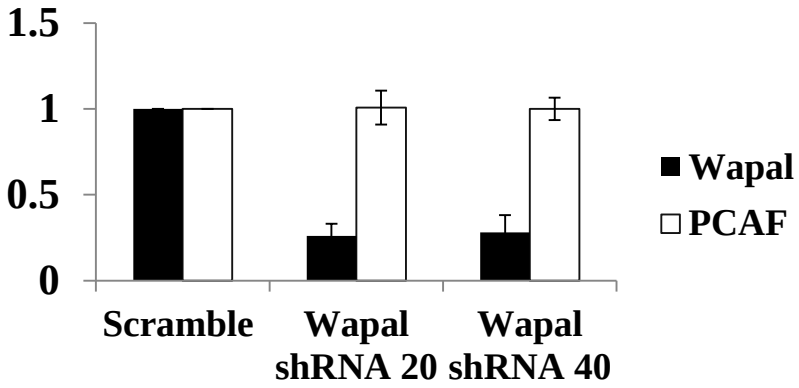
Supplementary Figure 6



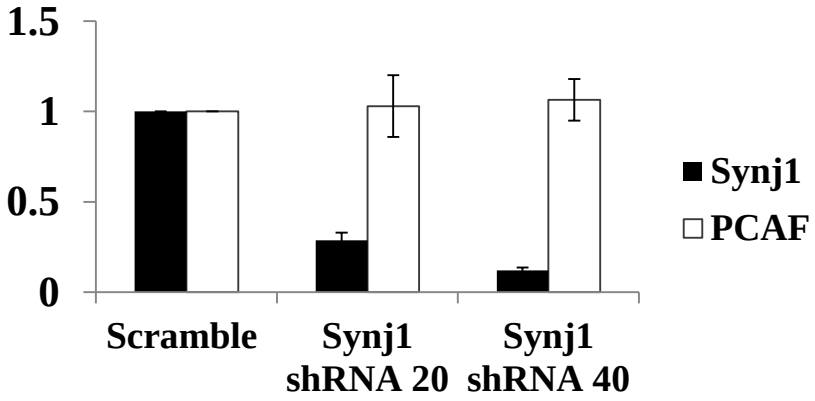
Supplementary Figure 6: The relative expression levels of miRs in naïve T cells.

Supplementary figure 7 Wapal and Synj1 silencing using shRNA lentiviral particles.

A Wapal silencing by shRNA lentiviral shRNA



B Synj1 silencing by shRNA lentiviral shRNA



Supplementary table 10. Primers for qPCR

Supplementary table 15. Primers for qPCR	5'-Forward	3'-Reverse
Wapal	actaaccatgtgggcaaagc	tagacccaatcccagcactc
Synj1	gtgcttacacccacgttcct	ttgctaacagcgagtgatgg
LPP	tacggcatccacatcttcaa	accaacacaggttggaggag
Fchsd2	ggcctacattgctcagcttc	cagggcccatagattcttca
PCAF	caaggccaatgaaacctgcaag	ggtagaaatagacttgtttggtg

Supplementary table 11: Enrichments of 68 Transcripts reduced in allo-activated T cells After CLIP

Symbol	Fold Change (Log)	Symbol	Fold Change(Log)	Symbol	Fold Change(Log)	Symbol	Fold Change(Log)
Fchsd2	-1.36619	Cyb5r3	-1.12556	Wapal	-1.08012	Itpr1	-1.03826
Lpp	-1.27923	AK010713	-1.12289	Ing1	-1.07058	Klf7	-1.03374
AI314180	-1.2673	Akap8	-1.10654	Rsrc2	-1.06999	2310009A05Rik	-1.03145
Zc3h7a	-1.25412	Zc3h7a	-1.10101	Nub1	-1.06992	Cabin1	-1.02948
Yipf1	-1.24532	Crnkl1	-1.10023	Med17	-1.06989	Il6st	-1.0206
Rab24	-1.24232	Nfyb	-1.09778	BI466860	-1.06342	Use1	-1.0206
Pex6	-1.23133	Synj1	-1.09761	4933433P14Rik	-1.05726	Ctdsp1	-1.01899
Flot2	-1.21728	Dock9	-1.09586	Ifngr2	-1.05496	Rcor1	-1.01502
Fmnl1	-1.18548	Zfp622	-1.09407	Mll3	-1.05494	Itm2c	-1.01173
Lipa	-1.18236	Narf	-1.09255	Kidins220	-1.05463	C87436	-1.01097
Mtor	-1.17886	AI326418	-1.09216	Mmp15	-1.04937	Cbx7	-1.0085
Hsd17b4	-1.15936	Lipa	-1.08997	Atp1a1	-1.04807	Akap9	-1.00568
Bat2	-1.15317	Cir1	-1.08946	Cyth3	-1.04686	Terf2ip	-1.00351
Ankrd17	-1.14679	Cd200r1	-1.08569	Brd8	-1.04647	Ifi203	-1.0025
Ptpra	-1.14011	L3mbtl3	-1.08459	Lrrfip1	-1.04385	Clk3	-1.00196
Ccdc55	-1.13829	Igl-V1	-1.08459	Rnf185	-1.04299	Phrf1	-1.00046
Prf1	-1.13095	Tgs1	-1.08063	Sirt7	-1.04281	Katna1	-1.00035

Supplementary Figure 8:
Full unedited gels for Figure 5 C