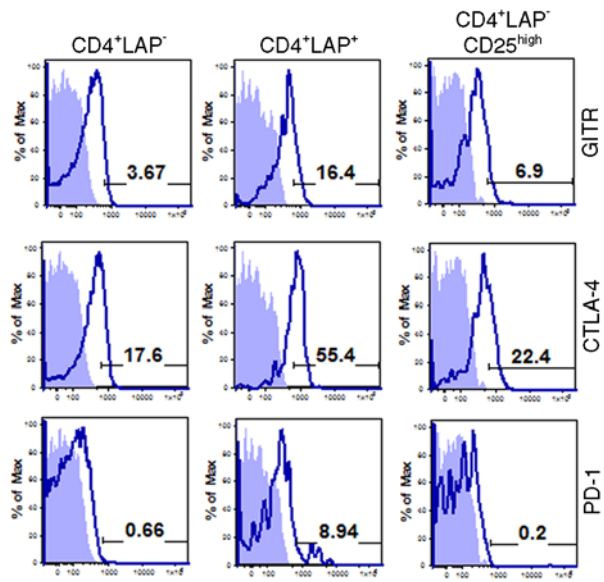


Supplementary figure legends

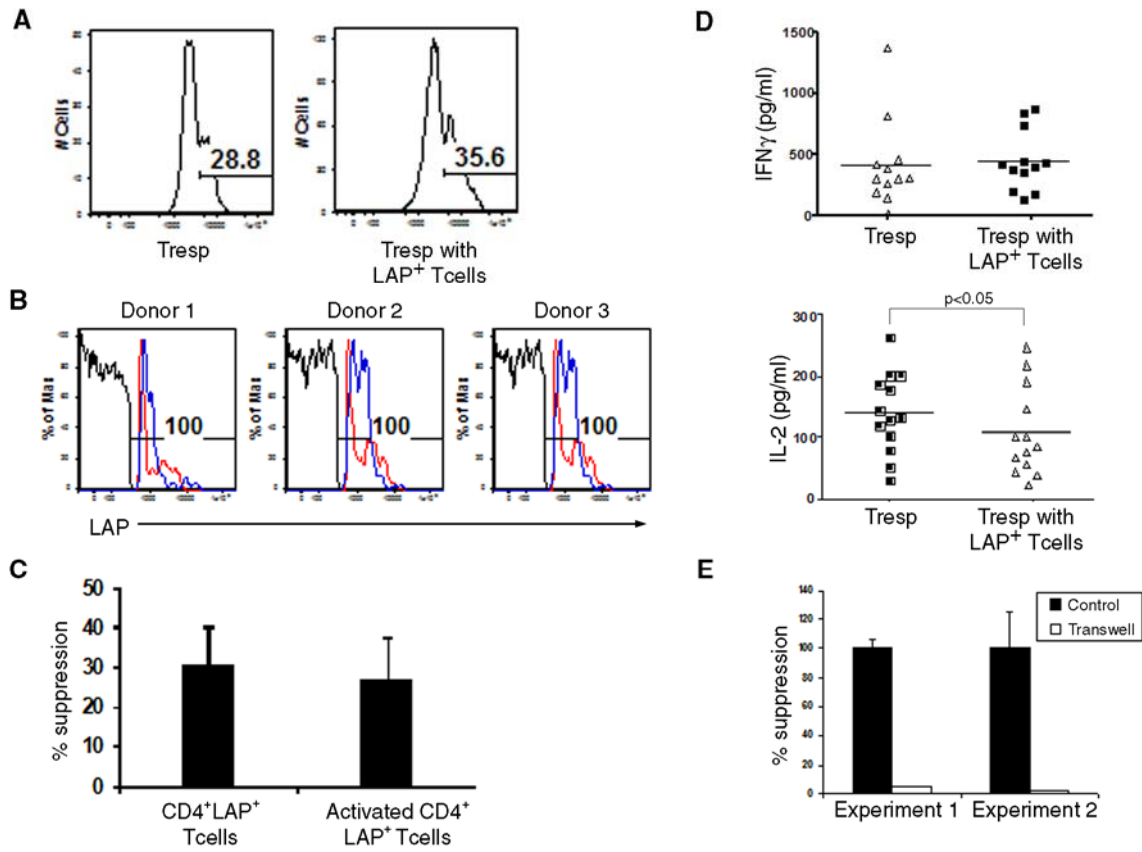
Figure 1: *Selective expression of regulatory markers on CD4⁺LAP⁺ T cells.* Human peripheral blood mononuclear cells were stained with AAD, annexin, CD3, CD4, CD25, LAP and specific markers including GITR, CTLA-4 and PD-1. Filled blue profiles represent isotype control; empty profiles represent specific staining for different antibodies on selected populations. The percentage positive cells are indicated in each plot. Results are representative of 3 independent experiments.

Figure 2: *Suppressive activity of non-activated and activated CD4⁺LAP⁺ T cells.* **A**, Proliferation of CFSE labeled responder T cells in absence and presence of CD4⁺LAP⁺ T cells. **B**, Sorted CD4⁺LAP⁺ T cells were activated with anti-CD3, anti-CD28 and IL-2 and were stained for expression of LAP. Black histograms represent CD4⁺LAP⁻ cells, red histograms represent CD4⁺LAP⁺ cells on day0 and blue histograms represent expression of LAP on CD4⁺LAP⁺ T cells after 48hrs of activation. **C**, Suppression mediated by activated or non-activated CD4⁺LAP⁺ T cells. Results are shown as mean and SD of four independent experiments. **D**, Effect of CD4⁺LAP⁺ T cells on IFN- γ and IL-2 secretion from responder T cells in a co-culture assay. **E**, Suppression of responder T cell proliferation mediated by CD4⁺LAP⁺ T cells in absence and presence of transwell.

Supplementary Figure 1



Supplementary Figure 2



Supplementary Table 1: List of antibodies used to determine signaling pathways in LAP⁺ T cells

Target	Company
Phospho-Elk-1 (Ser383) Antibody	Cell Signaling Technology
Phospho-p38 MAPK (Thr180/Tyr182)	Cell Signaling Technology
Phospho-p38 MAPK (Thr180/Tyr182)	Millipore
Phospho-p38 MAP Kinase (Thr180/Tyr182) Antibody	Cell Signaling Technology
Phospho-MKK3/MKK6 (Ser189/207) Antibody	Cell Signaling Technology
Phospho-ATF-2 (Thr71) Antibody	Cell Signaling Technology
Phospho-HSP27 (Ser82) Antibody	Cell Signaling Technology
Phospho-MAPKAPK-2 (Thr334) Antibody	Cell Signaling Technology
Phospho-SEK1/MKK4 (Thr261) Antibody	Cell Signaling Technology
Phospho-SAPK/JNK (Thr183/Tyr185) Antibody	Cell Signaling Technology
Phospho-ATF-2 (Thr71) Antibody	Cell Signaling Technology
Phospho-c-Jun (Ser63) II Antibody	Cell Signaling Technology
Phospho-Akt (Ser473) Antibody	Cell Signaling Technology
Phospho-Akt (Thr308) Antibody	Cell Signaling Technology
Akt Antibody	Cell Signaling Technology
Phospho-GSK-3beta (Ser9) Antibody	Cell Signaling Technology
Phospho-Raf (Ser259) Antibody	Cell Signaling Technology
Phospho-PTEN (Ser380) Antibody	Cell Signaling Technology
Phospho-PDK1 (Ser241) Antibody	Cell Signaling Technology
Phospho-Stat1 (Tyr701) Antibody	Cell Signaling Technology
Phospho-Stat2 (Tyr690) Antibody	Cell Signaling Technology
Phospho-Stat3 (Tyr705) Antibody	Cell Signaling Technology
Phospho-Stat3 (Ser727) Antibody	Cell Signaling Technology
Phospho-Stat5 (Tyr694) Antibody	Cell Signaling Technology
Phospho-Stat6 (Tyr641) Antibody	Cell Signaling Technology

Phospho-c-Raf (Ser338) (56A6) Rabbit mAb	Cell Signaling Technology
Phospho-Src Family (Tyr416) Antibody	Cell Signaling Technology
Phospho-Pyk2 (Tyr402)	Cell Signaling Technology
Pyk2	Cell Signaling Technology
Phospho-MEK1/2 (Ser217/221) Antibody	Cell Signaling Technology
Phospho-MEK1/2 (Ser221)	Cell Signaling Technology
Phospho-p44/42 MAPK (Thr202/Tyr204)	Cell Signaling Technology
Phospho-p44/42 MAP Kinase (Thr202/Tyr204) Antibody	Cell Signaling Technology
Phospho-Erk 1/2 (Thr202/Tyr204)	Millipore
Phospho-p90RSK (Ser380) Antibody	Cell Signaling Technology
Phospho-PKC (pan) (BetaII Ser660) Antibody	Cell Signaling Technology
Phospho-PKAlpha/betaII (Thr638/641) Antibody	Cell Signaling Technology
Phospho-PKCdelta (Thr505) Antibody	Cell Signaling Technology
Phospho-PKCdelta (Ser643) Antibody	Cell Signaling Technology
Phospho-PKD/PKCmu (Ser744/748) Antibody	Cell Signaling Technology
Phospho-PKD/PKCmu (Ser916) Antibody	Cell Signaling Technology
PKD/PKCmu Antibody	Cell Signaling Technology
Phospho-PKTheta (Thr538) Antibody	Cell Signaling Technology
Phospho-PKCzeta/lambda (Thr410/403) Antibody	Cell Signaling Technology
Phospho-Lck (Tyr505) Antibody	Cell Signaling Technology
LAT (phospho Y191) antibody [E205]	Abcam
Phospho-Zap70 (Y315 + Y319)	Abcam
Phospho-ZAP70 (Tyr493)	Abcam
Phospho-CD19 (Tyr513) Antibody	Cell Signaling Technology
Phospho-Syk (Tyr323) Antibody	Cell Signaling Technology
Phospho-Syk (Tyr525/526) Antibody	Cell Signaling Technology
Syk Antibody	Cell Signaling Technology
Phospho-Zap-70 (Tyr319)/Syk (Tyr352) Antibody	Cell Signaling Technology
Phospho-BLNK (Tyr96) Antibody	Cell Signaling Technology
Phospho-PLCgamma2 (Tyr1217) Antibody	Cell Signaling Technology
Phospho-PLCgamma1 (Tyr771) Antibody	Cell Signaling Technology
Phospho-NFKB2 p100 (Ser866/870)	Cell Signaling Technology

Phospho-NF-kappaB p105 (Ser933) Antibody	Cell Signaling Technology
Phospho-NF-kB p65 (Ser536) Antibody	Cell Signaling Technology
Phospho-IKKalpha/beta (Ser176/180) Antibody II	Cell Signaling Technology
Phospho-IkappaB-alpha (Ser32) Antibody	Cell Signaling Technology
Phospho-Akt Substrate (RXRXXS/T) (110B7) Rabbit mAb	Cell Signaling Technology
Phospho-(Ser) PKC Substrate Antibody	Cell Signaling Technology
Phospho-PKA Substrate (RRXS/T) (100G7) Rabbit mAb	Cell Signaling Technology
Phospho-SHIP1	Cell Signaling Technology
Phospho-(Ser) CDKs Substrate Antibody	Cell Signaling Technology
Phospho-(Ser/Thr) ATM/ATR Substrate Antibody	Cell Signaling Technology
Phospho-IRAK1 (Ser376) Antibody	Cell Signaling Technology
Phospho-TAK1 (Thr184/187) (90C7) Rabbit mAb	Cell Signaling Technology
Phospho-IRF-3 (Ser396) Antibody	Cell Signaling Technology
Phospho-IRAK (Thr209)	Abcam
Phospho-Smad2 (Thr220)	Abcam
Phospho-Smad2 (Ser465/467)	Abcam
Phospho-Smad3 (Ser423/425)	Abcam
Phospho-Smad1/5 (ser463/465)	Cell Signaling Technology
Phospho-Smad2 (Ser465/467)	Cell Signaling Technology
Phospho-mTor (Ser2448)	Cell Signaling Technology
Phospho-mTor (Ser 2481)	Cell Signaling Technology
Phospho-MKK7(Ser271/Thr275) Antibody	Cell Signaling Technology
Phospho-Tpl2 (Ser 400)	Cell Signaling Technology
Phospho-PI3K p85 (Tyr458)/p55 (Tyr199)	Cell Signaling Technology
Phospho-MARCKS (Ser 152-156)	Prosci
Phospho-cFos (Thr232)	Prosci
Tpl2 Antibody	Cell Signaling Technology
PI3K p85	Cell Signaling Technology
mTor	Cell Signaling Technology
Smad2	Cell Signaling Technology
Smad5	Cell Signaling Technology
Phospho-FoxO1 (Ser256) Antibody	Cell Signaling Technology

Phospho-FoxO1 (Ser319)/FoxO4 (Ser262) Antibody	Cell Signaling Technology
Phospho-FoxO1 (Thr24)/FoxO3a (Thr32) Antibody	Cell Signaling Technology
Phospho-FoxO3a (Ser318/321) Antibody	Cell Signaling Technology
Phospho-FoxO3a (Ser253) Antibody	Cell Signaling Technology
FoxO1 Antibody	Cell Signaling Technology
FoxO3a Antibody	Cell Signaling Technology
FoxO4 Antibody	Cell Signaling Technology
IRAK4	Cell Signaling Technology
IRAK-M Antibody	Cell Signaling Technology
IRAK antibody	Abcam
p38 MAP Kinase Antibody	Cell Signaling Technology
PKC α Antibody	Cell Signaling Technology
TAK1 Antibody	Cell Signaling Technology
Phospho-Src (Tyr527) Antibody	Cell Signaling Technology
FOXP3	Abcam
ROR γ T	Biologend
Phospho-Stat1 (Ser727)	Cell Signaling Technology
Phospho-Stat5 (Tyr694)	Cell Signaling Technology
Acetyl-Stat3 (Lys685) Antibody	Cell Signaling Technology
Phospho-Stat1 (Ser727)	Abcam
Phospho-Stat5 (Tyr694)	Abcam
Phospho-Stat6 (Tyr641)	Abcam
Stat1	Cell Signaling Technology
Stat2	Cell Signaling Technology
Stat3	Cell Signaling Technology
Stat5	Cell Signaling Technology
Stat6	Cell Signaling Technology
Smad3	Cell Signaling Technology
Smad4	Cell Signaling Technology
Smad6	Cell Signaling Technology
Phospho-Smad2 (Ser467)	Abcam
Phospho-Smad3 (Ser423/425)	Cell Signaling Technology

Src	Cell Signaling Technology
Phospho-Src (Tyr529)	Abcam
Phospho-Src (Tyr418)	Abcam
Non-phospho-Src (Tyr527)	Cell Signaling Technology
IRF3	Cell Signaling Technology
IRF4	Cell Signaling Technology
IRF7	Abcam
IRF8	Abcam
Phospho-IRF-3 (Ser396)	Cell Signaling Technology
Aryl hydrocarbon Receptor	Abcam
p44/42 MAPK (Erk1/2)	Cell Signaling Technology
TRAF2	Cell Signaling Technology
TRAF3	Cell Signaling Technology
NIK	Cell Signaling Technology
Phospho-IKK alpha/beta (Ser176/180)	Cell Signaling Technology
IKK alpha	Cell Signaling Technology
NFkB2 p100/p52	Cell Signaling Technology
RelB	Cell Signaling Technology
Raptor	Cell Signaling Technology
Rictor	Cell Signaling Technology
MyD88 Antibody	Cell Signaling Technology
Tollip Antibody	Cell Signaling Technology
TAB1	Abcam
SOCS1	Abcam
TRAF6	Abcam
Phospho-Rac1/cdc42 (Ser71) Antibody	Cell Signaling Technology
Phospho-CREB (Ser133)	Cell Signaling Technology
ATF3	Abcam
MEF2C	Proteintech
MEF2C (phospho S387)	Abcam
MEF2C (phospho T300)	Abcam