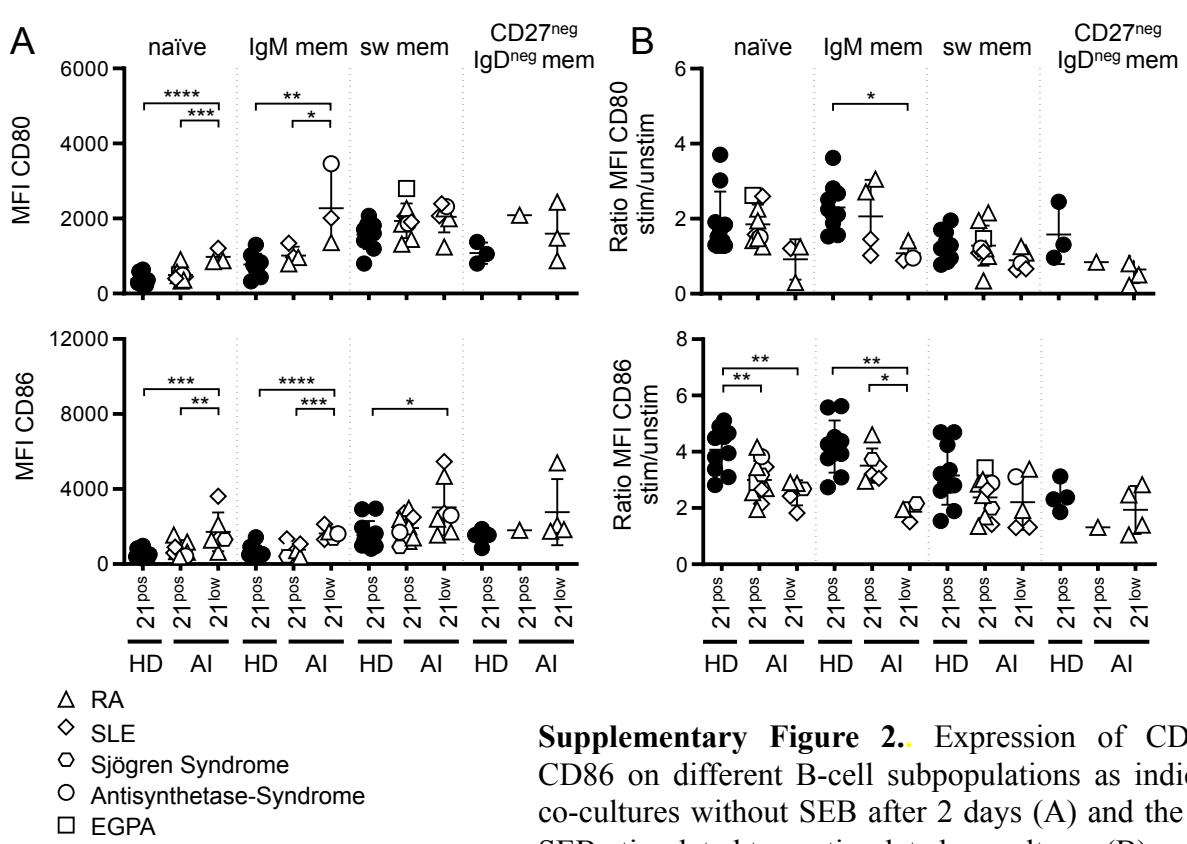
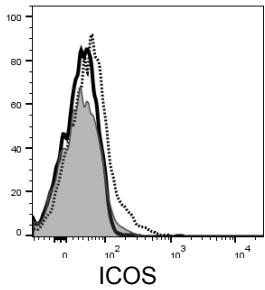


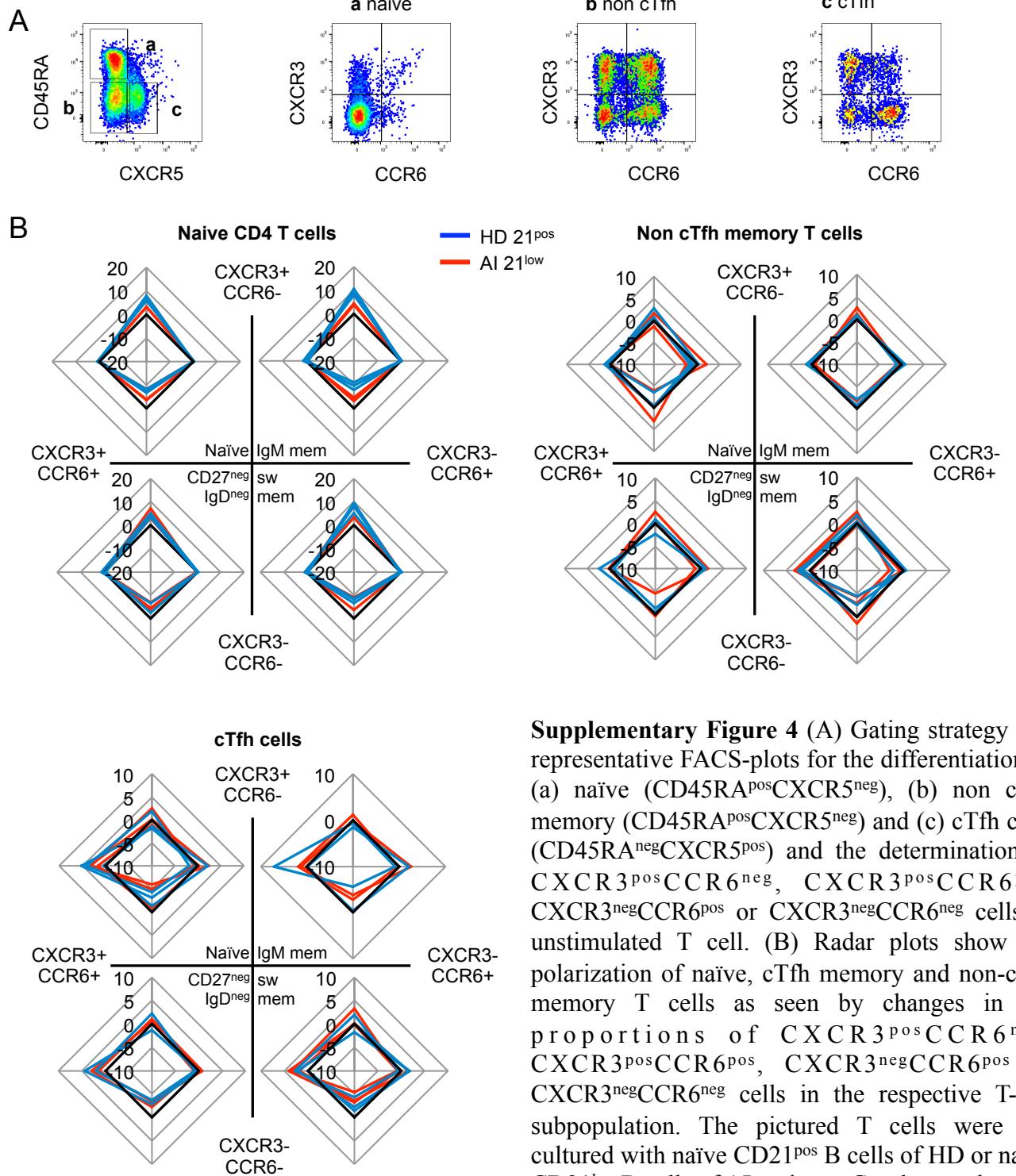
Supplementary Figure 1. Expression of CD11c, FCRL5, CD95, ICAM-1, CD40 and CXCR5 on naïve, IgM memory (IgM mem), switched memory (sw mem) and CD27^{neg}IgD^{neg} memory CD21^{pos} B cells of HD and CD21^{pos} and CD21^{low} B cells of AI patients. (B) Statistical analysis of ICOSL, OX40L and (C) PD-L1 and PD-L2 as described in (A.)



Supplementary Figure 2. Expression of CD80 and CD86 on different B-cell subpopulations as indicated in co-cultures without SEB after 2 days (A) and the ratio of SEB-stimulated to unstimulated co-cultures (B).



Supplementary Figure 3: Representative FACS plot for ICOS gated on CD45R0 T cells. Histograms show T cells cultured alone (black line) or T cells from T-B co-culture stimulated with CD27^{neg}IgD^{neg} memory B cells of HD in the presence of SEB (dashed black line). The tinted grey line show ICOS expression on CD27^{neg}IgD^{neg} memory B cells of the same donor as a negative control.



Supplementary Figure 4 (A) Gating strategy and representative FACS-plots for the differentiation of (a) naïve ($CD45RA^{pos}CXCR5^{neg}$), (b) non cTfh memory ($CD45RA^{pos}CXCR5^{neg}$) and (c) cTfh cells ($CD45RA^{neg}CXCR5^{pos}$) and the determination of $CXCR3^{pos}CCR6^{neg}$, $CXCR3^{pos}CCR6^{pos}$, $CXCR3^{neg}CCR6^{pos}$ or $CXCR3^{neg}CCR6^{neg}$ cells in unstimulated T cell. (B) Radar plots show the polarization of naïve, cTfh memory and non-cTfh memory T cells as seen by changes in the proportions of $CXCR3^{pos}CCR6^{neg}$, $CXCR3^{pos}CCR6^{pos}$, $CXCR3^{neg}CCR6^{pos}$ or $CXCR3^{neg}CCR6^{neg}$ cells in the respective T-cell subpopulation. The pictured T cells were co-cultured with naïve $CD21^{pos}$ B cells of HD or naïve $CD21^{low}$ B cells of AI patients. Graphs are showing the difference of T cell subsets in co-culture with SEB to T cells stimulated with SEB alone in three independent experiments.

Supplementary Table 1

Assay	patient #	B cell HD #	T cell HD #	HD CD21 ^{pos}				Pat CD21 ^{pos}				Pat CD21 ^{low}					
				naive	IgM mem	sw mem	CD27 ^{neg} IgD ^{neg} mem	naive	IgM mem	sw mem	CD27 ^{neg} IgD ^{neg} mem	naive	IgM mem	sw mem	CD27 ^{neg} IgD ^{neg} mem	Surface staining	Cytokines
#1	#1	#1	#12	x	x	x		x	x	x					x	x	
#2	#2	#2	#13	x	x	x									x	x	
#3	#3	#3	#14	x	x	x		x		x		x		x	x	x	
#4	#4	#4	#15	x	x	x	x	x	x	x	x	x	x		x	x	
	#5	#4	#15					x	x	x		x	x		x	x	
#5	No patient	#5	#16	x	x	x	x								x		
#6	#6	#6	#17	x	x	x		x	x	x	x			x		x	
	#7	#6	#17					x	x	x				x	x	x	
#7	#8	#7	#18	x	x	x	x	x		x	x		x	x	x	x	x
#8	#9	#8	#19	x	x	x	x	x	x	x		x	x	x		x	
#9	#10	#9	#20	x	x	x	x	x	x	x		x	x	x		x	x
#10	#11	#10	#21	x	x	x	x	x	x	x		x		x	x	x	x
#11	#12	#11	#22	x	x	x	x	x	x	x		x	x	x		x	
	Total:			11	11	11	7	11	9	11	3	7	6	7	5	13	7