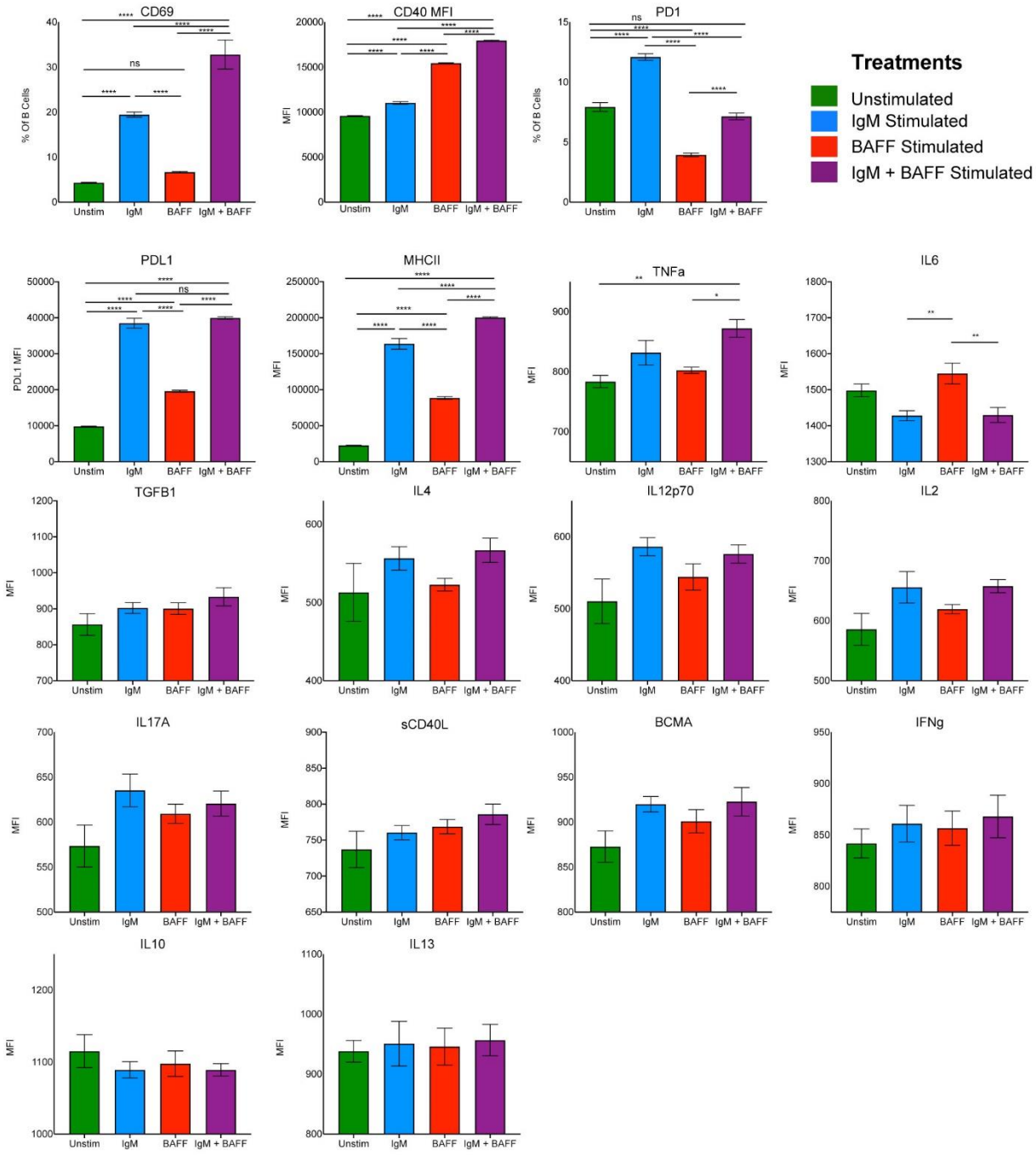
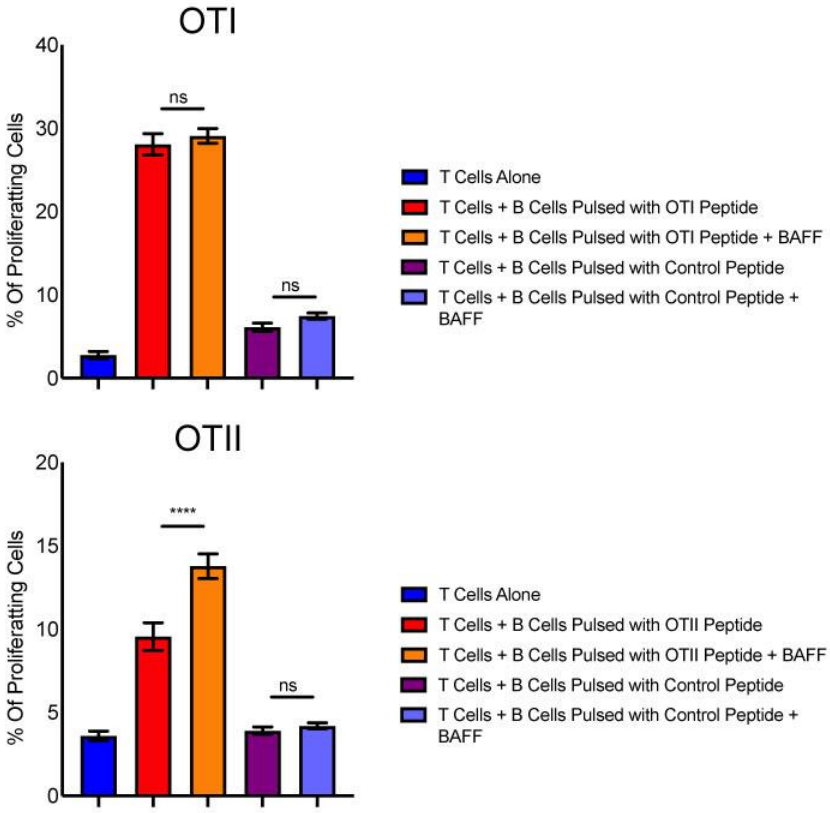
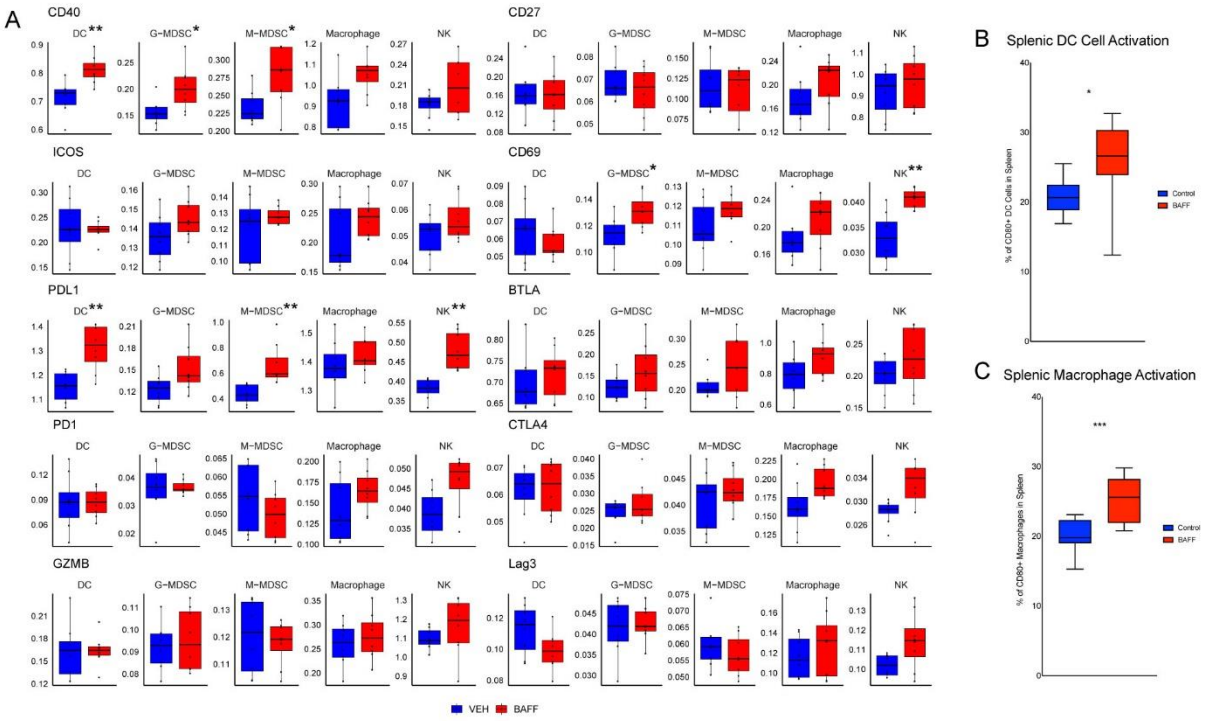


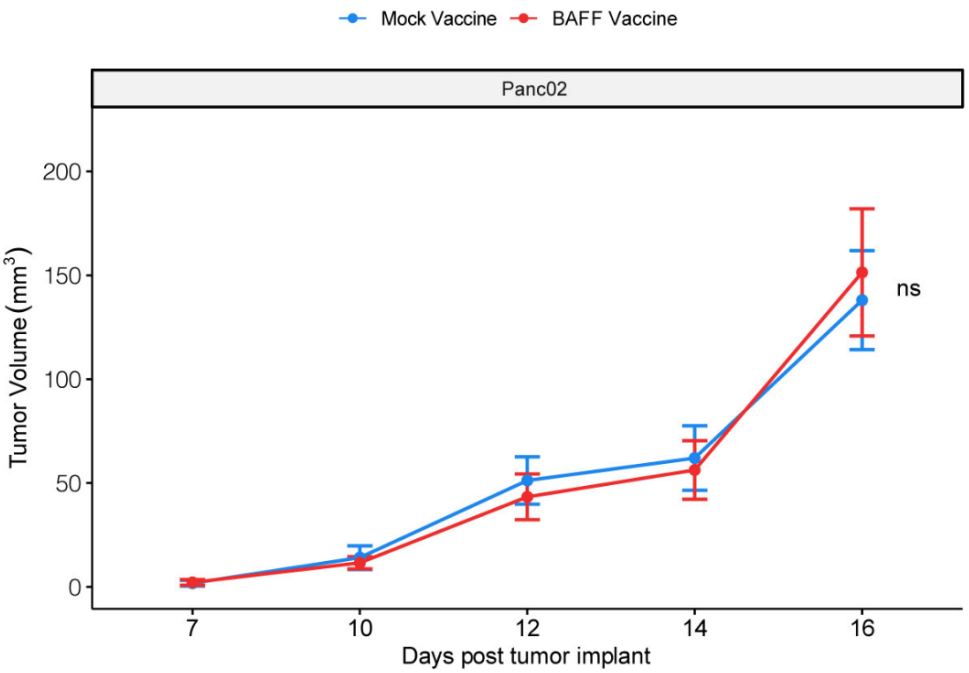
Supplementary Fig 1. BAFF modulates B cell surface markers and cytokine expression in the context of BCR engagement. Splenic B cells isolated from a C57B6 mouse were stimulated for 72 hours with or without recombinant BAFF and with or without an anti-IgM antibody, which simulates BCR antigen engagement, followed by a bead-based assay for cell surface and cytokine analysis. BAFF alone and in combination with anti-IgM enhanced CD69, MHCII, PD-L1, and CD40 expression. Treatment with BAFF plus anti-IgM decreased PD1 expression as compared to anti-IgM alone. N = 10 per group, one way ANOVA followed by a post Tukey's test was used to determine statistical significance between groups. *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001.



Supplementary Fig 2. BAFF allows B cells to increase antigen presentation in a MHCII restricted manner. We cultured isolated splenic B cells with and without OT-1 peptide [GLEQLESIINFEKLTEWTSS] or OT-II peptide [SLKISQAVHAAHAEINEAGR], and with or without 5 ug/ml of recombinant BAFF. The B cells were subsequently washed 3 times to remove excess BAFF and unbound ovalbumin, and then co-cultured with CD8 T cells isolated from an OT-I transgenic mice and CD4 T cells isolated from OT-II transgenic mice for 48 hours. B cells primed with BAFF were markedly more capable of activating CD4 T cells from an OT-II transgenic mouse as compared to B cells that were not primed with BAFF, were not more able to activate CD8 T cells from an OT-I transgenic mouse. The Ttn peptide is used as the negative control in the OTI experiments and the Pnpla7 peptide is used as the negative control in the OTII experiments. N = 10 per group, one way ANOVA followed by a post Tukey's test was used to determine statistical significance between groups. ****$p<0.0001$.



Supplementary Fig 3. BAFF treatment induces activation of splenic innate immune cells. (A) BAFF increases the expression of CD40 on dendritic cells (DCs) as well as monocytic and granulocytic myeloid derived suppressor cells (G-MDSCs and M-MDSCs) by CyTOF. BAFF also increases the expression of PDL1 on DC Cells, M-MDSCs, and NK cells, and increases the expression of CD69 on G-MDSCs and NK cells. N=8 per group, two-tailed unpaired t-tests, *p<0.05, **p<0.01, ***p<0.001. (B) Increased activation of splenic DCs was confirmed by FACs. A greater proportion of DC Cells express the CD80 activation marker in the spleen following treatment with BAFF. (C) A greater proportion of DC Cells express the CD80 activation marker in the spleen following treatment with BAFF. For figures B-C, N=10 per group, two-tailed unpaired t-tests, *p<0.05, **p<0.01, ***p<0.001.



Supplementary Fig 4. Depletion of CD19 B cells with the administration of anti-CD19 antibodies prior to vaccination identified that the anti-tumor effects of adjuvant BAFF was dependent on the presence of B cells. Results are shown as mean ± s.e.m. (n=10 per group).

Supplementary Table 1

MARKER	COLOR	CLONE	CAT. NUMBER	DILUTION
FOXP3	AF488	MF-14	126406	1:100
RORGT	PE	AFKJS-9	12-6988-82	1:50
CCR6	PE-Dazzle	29-2L17	129822	1:400
T-BET	PerCP-Cy5.5	4B10	45-5825-82	1:100
KI-67	PE-Cy7	SolA15	25-5698-82	1:400
GATA3	AF647	16E10A23	653810	1:50
CD44	AF700	IM7	BD 560567	1:400
LIVE/DEAD	Near IR	-	L34975	1:1000
CD62L	BV421	MEL-14	BD 562910	1:400
CD4	eFluor 506	RM4-5	69-0042-82	1:1000
CD45	SuperBright 600	30-F11	63-0451-82	1:1000
CD8	SuperBright 645	53-6.7	64-0081-82	1:1000
EOMES	PE	Dan11mag	12-4875-82	1:100
PD-L1	PE-Dazzle	10F.9G2	124324	1:400
OX40	PE-Cy7	OX86	25-1341-82	1:100
CD28	APC	37.51	17-0281-82	1:200
PD-1	APC-R700	J43	BDB565815	1:200
LAG3	eFluor 450	C9B7W	48-2231-82	1:100

Supplementary Table 2

MASS	METAL	ANTIGEN	CLONE	VENDOR	DILUTION	CUSTOM
115	In	CD45	30-F11	Biolegend	1:100	x
141	Pr	Ly6G	1A8	Fluidigm	1:50	
142	Nd	CD11c	N418	Fluidigm	1:100	
143	Nd	CD278/ICOS	C398.4A	Fluidigm	1:100	
145	Nd	CD69	H1.2F3	Fluidigm	1:100	
146	Nd	F4/80	BM8	Fluidigm	1:100	
148	Nd	CD11b (Mac-1)	M1/70	Fluidigm	1:100	
149	Sm	CD19	6D5	Fluidigm	1:100	
150	Nd	Ly6C	HK1.4	Fluidigm	1:100	
151	Eu	CD25 (IL-2R)	3C7	Fluidigm	1:100	
152	Sm	CD3e	145-2C11	Fluidigm	1:50	
153	Eu	CD274 (PD-L1)	10F.9G2	Fluidigm	1:100	
154	Sm	CD152 (CTLA-4)	UC10-4B9	Fluidigm	1:100	
156	Gd	CD272 (BTLA)	6F7	Fluidigm	1:100	
158	Gd	CXCR3	CXCR3-173	Biolegend	1:50	x
159	Tb	CD279 (PD-1)	29F.1A12	Fluidigm	1:100	
160	Gd	CD5	53-7.3	Fluidigm	1:100	
161	Dy	CD40	HM40-3	Fluidigm	1:50	
163	Dy	CD27	LG.3A10	Biolegend	1:200	x
164	Dy	CD62L	MEL-14	Fluidigm	1:100	
165	Ho	Foxp3	FJK-16s	Fluidigm	1:33	
166	Er	RORgt	B2D	Thermo Fisher	1:50	x
168	Er	CD8a	53-6.7	Fluidigm	1:50	
170	Er	CD161 (NK1.1)	PK136	Fluidigm	1:50	
171	Yb	CD44	IM7	Fluidigm	1:100	
172	Yb	CD4	RM4-5	Fluidigm	1:200	
173	Yb	Granzyme B	GB11	Fluidigm	1:50	
174	Yb	CD223 (LAG-3)	C9B7W	Fluidigm	1:100	
175	Lu	CD1d	1B1	Biolegend	1:100	x
194	Pt	CD45	30-F11	Biolegend	1:100	x