

Extended Data Table 1

TRA	CD4 T #1	CD4 T #2	DOCK8- CD4 T #1	DOCK8- CD4 T #2	DOCK8+ CD4 T #1	DOCK8+CD4 T #2
Total reads	193,774	206,781	172,710	129,498	147,897	221,422
Assigned reads	135,768	145,701	121,219	90,609	101,179	140,871
In frame	110,913	118,935	96,581	72,875	83,322	114,838
Unique reads	15,567	12,394	15,359	16,492	5,825	6,855
Shannon-Weaver index H'	8.453	7.947	8.422	8.703	6.549	5.836
Inverted Simpson index $1/\lambda$	470.434	469.903	313.785	502.295	110.569	161.292
TRB	CD4 T #1	CD4 T #2	DOCK8- CD4 T #1	DOCK8- CD4 T #2	DOCK8+ CD4 T #1	DOCK8+CD4 T #2
Total reads	217,074	200,017	152,937	168,242	92,615	148,256
Assigned reads	118,693	116,732	91,616	98,112	52,458	69,645
In frame	111,632	109,044	85,106	91,364	48,111	64,419
Unique reads	14,449	11,115	14,547	17,977	5,765	4,506
Shannon-Weaver index H'	8.777	8.305	8.808	9.125	7.187	6.070
Inverted Simpson index $1/\lambda$	4475.45	2834.31	4154.90	5494.83	702.46	208.280
TRA x TRB						
Inverted Simpson index $1/\lambda$	2,105,386	1,331,842	1,303,766	2,760,053	77,671	33,593

Extended Data Table 2.

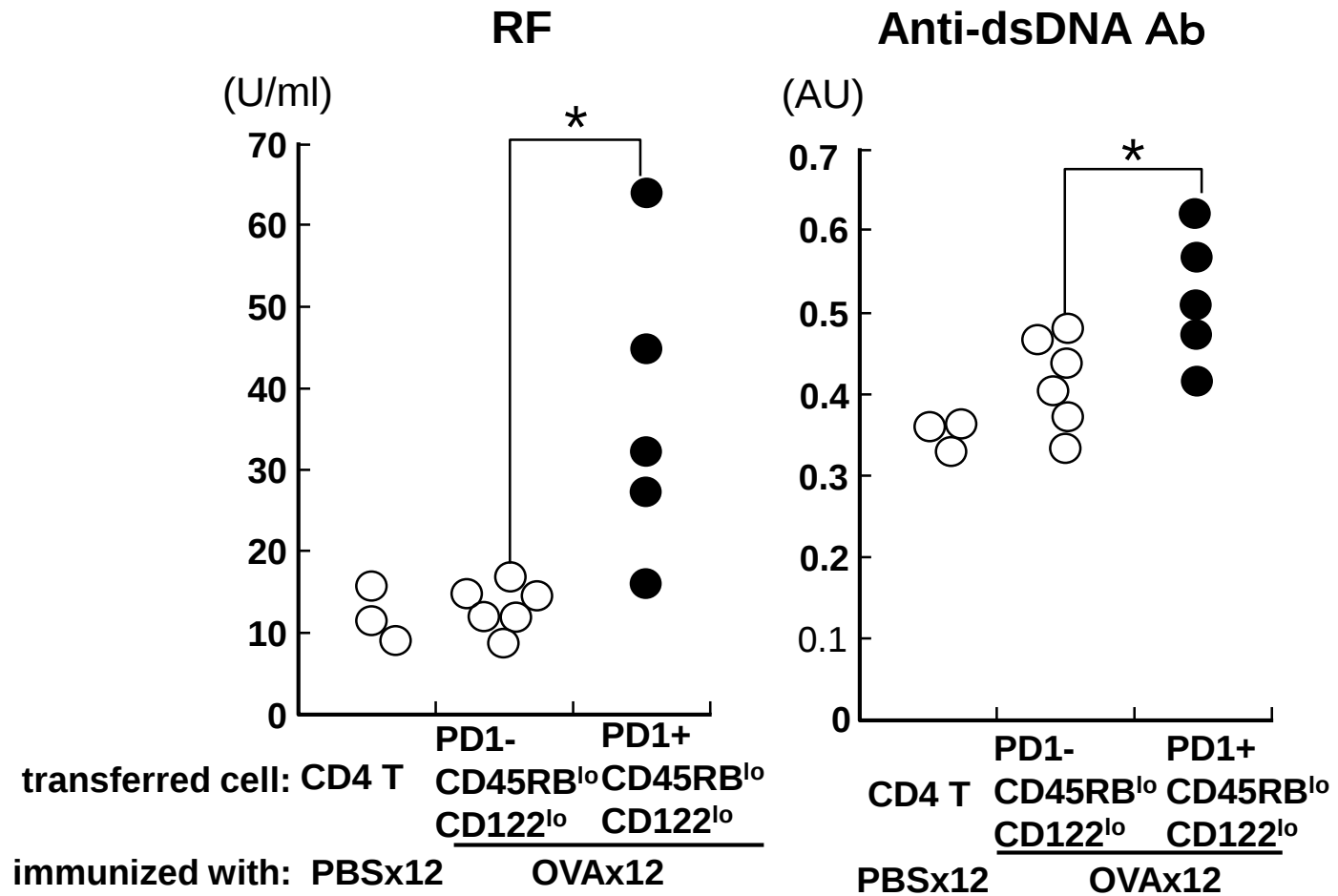
Mouse #1

TCRAV	TCRAJ	CDR3	reads	% usage
3-3	5	CAVSGSQVVGQLTF	1	0.001
	11	CAVRFDSRYNKLTF	1	0.001
	21	CAVSSGANNNELYF	1	0.001
4-3	35	CAATGFASALTF	1	0.001
4D-3	7	CAAEDYSNNRLTL	11	0.013
6-1	23	CVLETNYNQGRILF	1	0.001
		CVLERNYNQGKLIF	1	0.001
		CVLEMNYNQGKLIF	1	0.001
	44	CVPRGSGGKLT	5	0.006
6D-4	35	CALARGFASALTF	1	0.001
7D-4	23	CAAPGSYNQGKLIF	1	0.001
7-6	15	CAVTSLYQGGRALIF	1	0.001
	16	CGGKGTSSGQKLVF	26	0.031
8-1	32	CALWGRWQQAHLW	1	0.001
8D-2	58	CAPKGGTGSKLSF	16	0.019
		CAPKGGTGSKMSF	1	0.001
9D-2	30	CAVSADTNAYKVN	1	0.001
11	49	CEVGEGSALFWLFF	1	0.001
12D-1	32	CALIFWGQWQQAHLW	1	0.001
12-2	2	CAPSDPLNTGGLSGKLTF	1	0.001
		CALSDPLNTGGLSGKLTY	1	0.001
		CALSDPLNTGGLSGKLT	1	0.001
12D-2	31	CSAWSSDRISF	1	0.001
		CALSDDRIF	1	0.001
12N-2	35	CALSEAGFASALTF	1	0.001
12N-3	2	CALSDPRNTGGLSGKLTF	1	0.001
		CALSDPLKTGGLSGKLTF	1	0.001
13D-1	32	CALERGGSSGNKLIF	1	0.001
13D-4	21	CAMERGVNLYF	1	0.001
15-1/DV6-1	57	WALCEPLNQGS AKLIF	1	0.001
		CTLWEPLNQGS AKLIF	1	0.001
		CARWEPLNQGS AKLIF	1	0.001
		CALWGPLNQGS AKLIF	1	0.001
		CALWETMKQGS AKLIF	1	0.001
		CALWEPPNQGS AKLIF	1	0.001
		CALWEPLNQGS AKLIF	1	0.001
		CALCEPLNQGS AKLTF	1	0.001
		CAIWEPLNQGS YRKLIF	1	0.001
		CAMREGPGDNSKLW	3	0.004
		CAMREGYSSGNKLIF	1	0.001
16	38	CAMREGPGDNSKLW	3	0.004
16D/DV11	32	CAMREGYSSGNKLIF	1	0.001

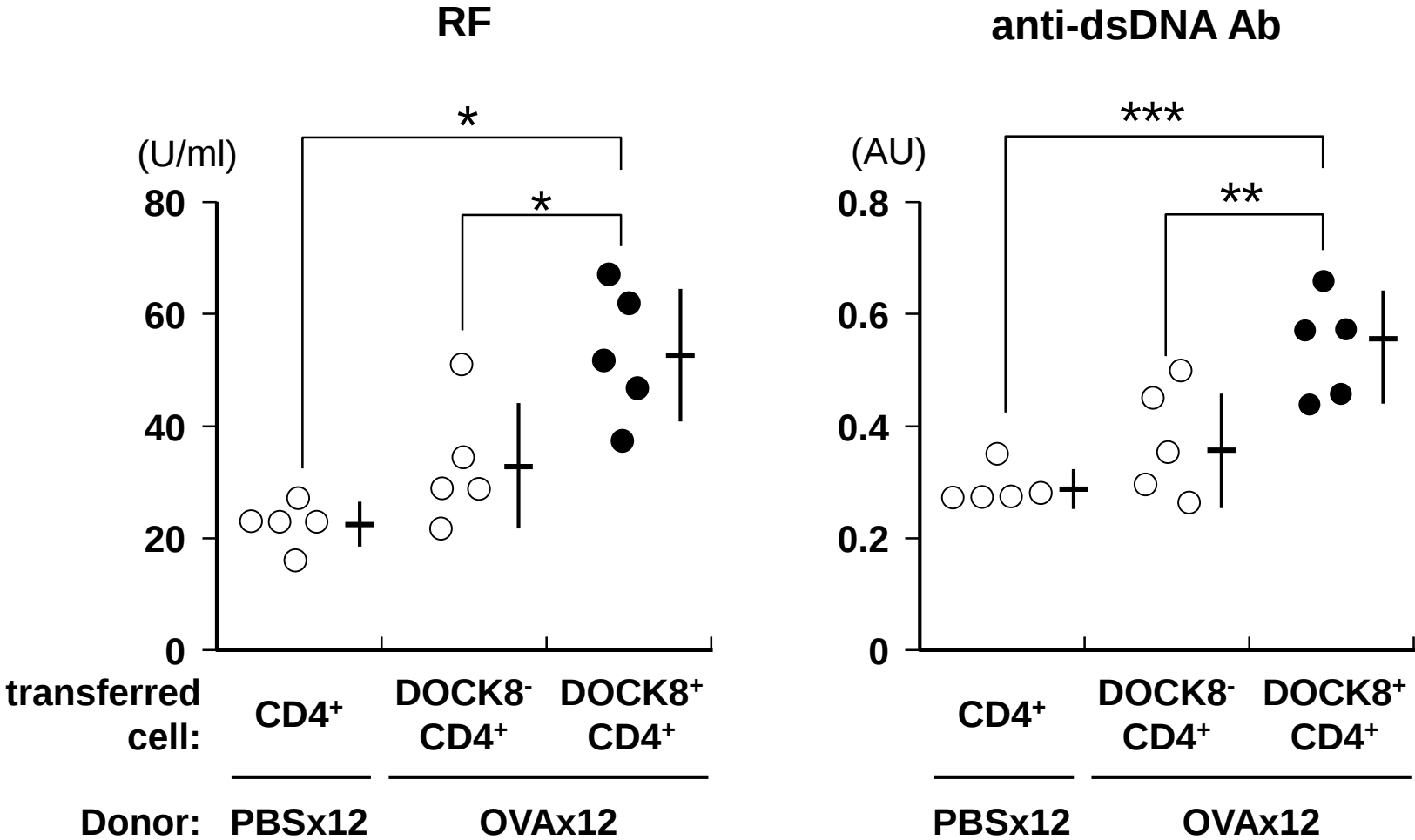
Mouse #2

TCRAV	TCRAJ	CDR3	reads	% usage
2	32	CIVTAPMGWQQAHLW	1	0.001
3-3	6	CAVTATSGGNYKPTF	1	0.001
	24	CAVSTTASLGKLQF	2	0.002
4-2	23	CADEASGNKLIF	1	0.001
4D-3	7	CAGEAGAYSNNRLTL	1	0.001
7-2	34	CAVTATSDNDNVF	1	0.001
7-5	23	CAVRNYNQGKLIF	2	0.002
		CAVKNYNQGKLIF	1	0.001
7D-6	6	CAAVASGGNYKPTF	1	0.001
		CAAISGGNYKPTI	1	0.001
		CAAISGGNYKLTF	1	0.001
		CAAIASGGNYKPTF	1	0.001
8-1	31	CATDNNKTRIFF	1	0.001
	40	CANTGNCKFVF	1	0.001
9D-4	32	CANYGGSGNKLIF	1	0.001
11	23	CSFVGADADYNLGRNLF	1	0.001
12N-2	35	CAVSEEGFASALTF	1	0.001
14-2	23	CAASPYSQGKLIF	1	0.001
14-3	23	CAASANYNQGKLIF	1	0.001
15-2/DV6-2	24	CALSEPMTTASLGKLQF	6	0.005
	34	CALSELGNTDKVVF	5	0.004
		CSLSELWNTDKVVF	1	0.001
		CAPREIRNPYKVF	1	0.001
		CALSELRNTNKVVF	1	0.001
		CALSELRNTDKIVF	1	0.001
		CALSELRNTAKVVF	1	0.001
15D-2/DV6D-2	18	CALSELGGSALGRLHF	1	0.001
16D/DV11	32	CTMLEQYGSSSNKLSF	1	0.001
		CGMGEGYGSSVDKLIF	1	0.001

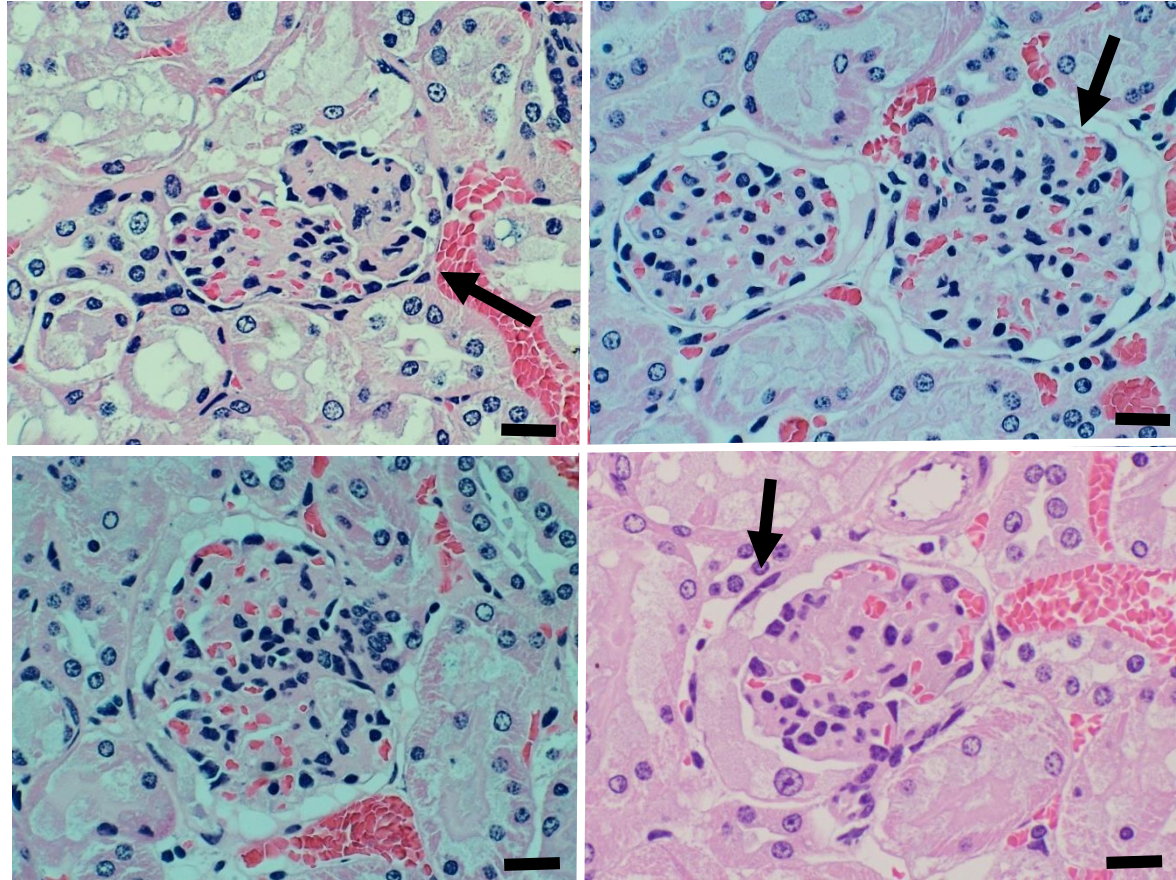
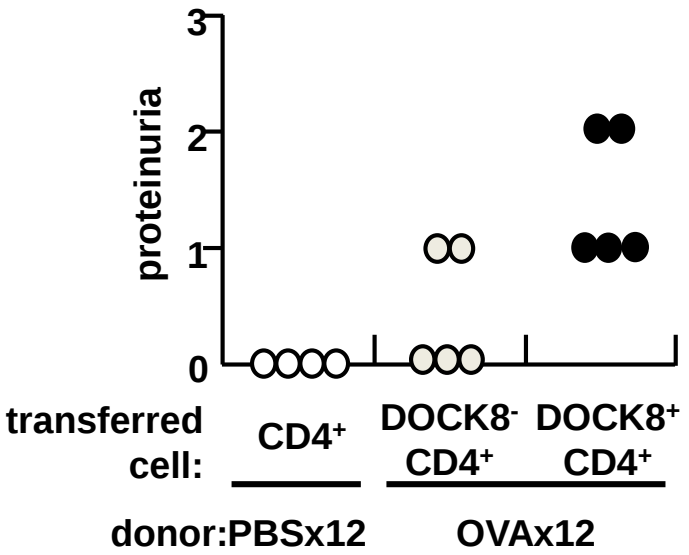
Extended Data Fig 1



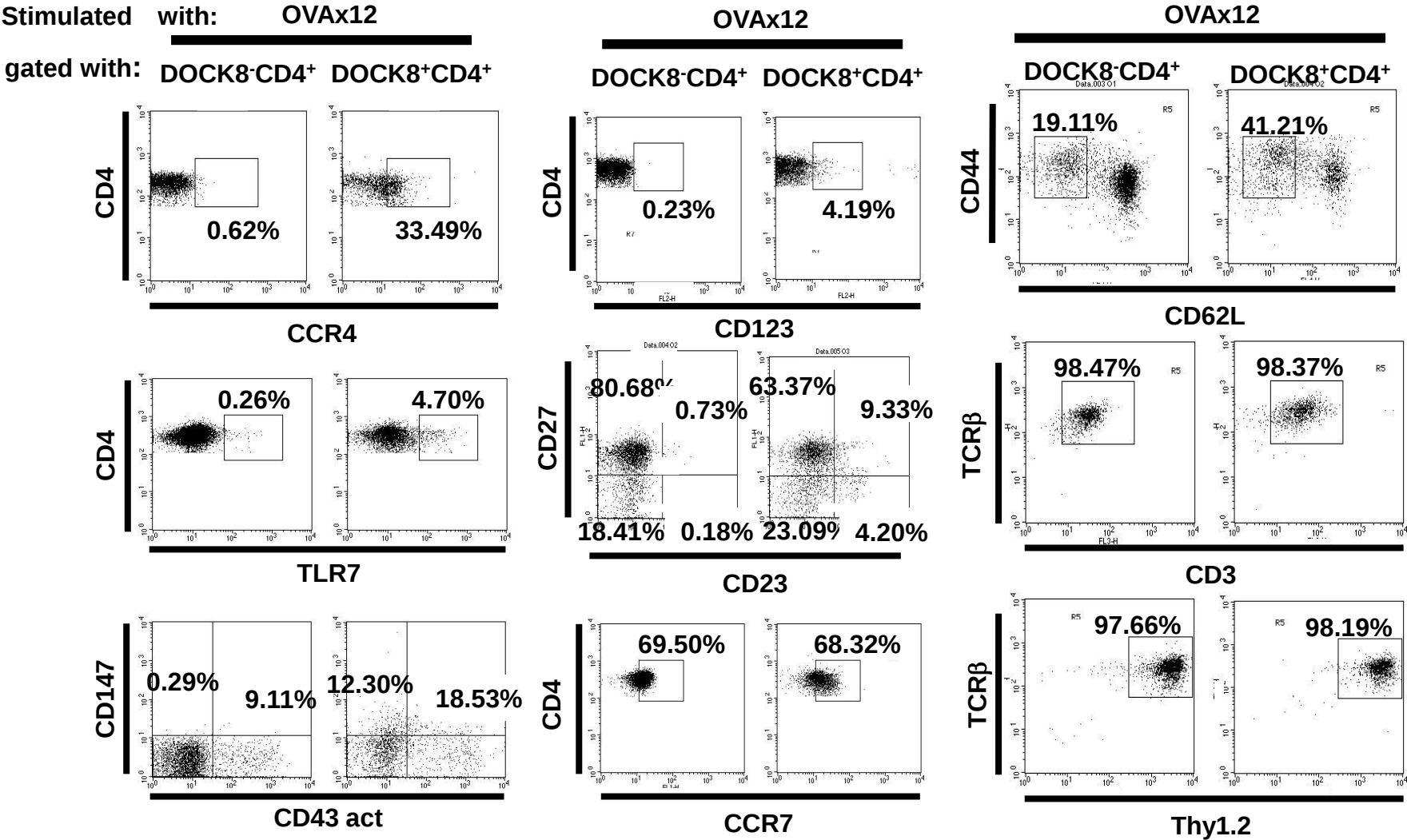
Extended Data Fig. 2a



Extended Data Fig. 2b

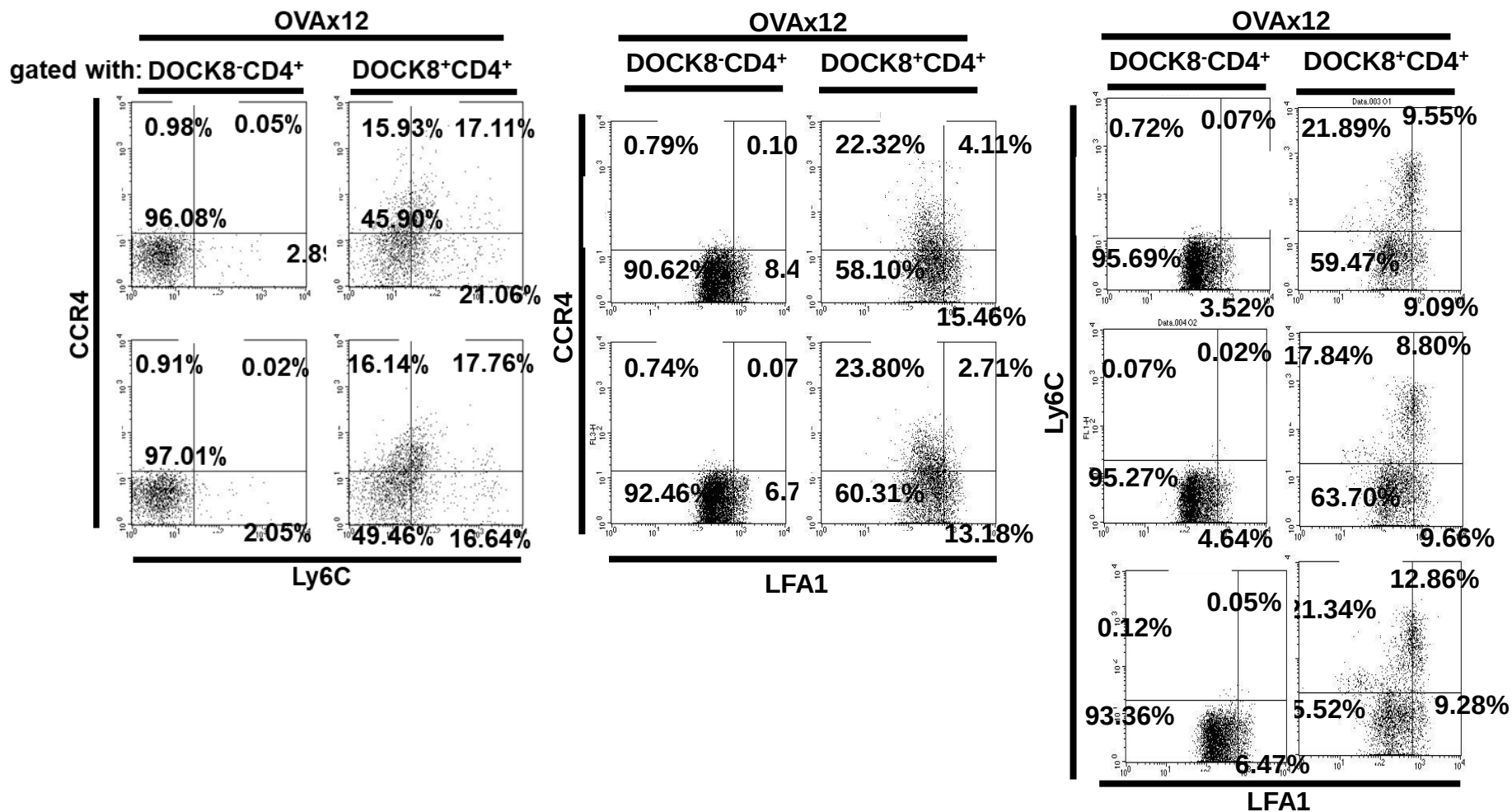


Extended Data Fig. 3



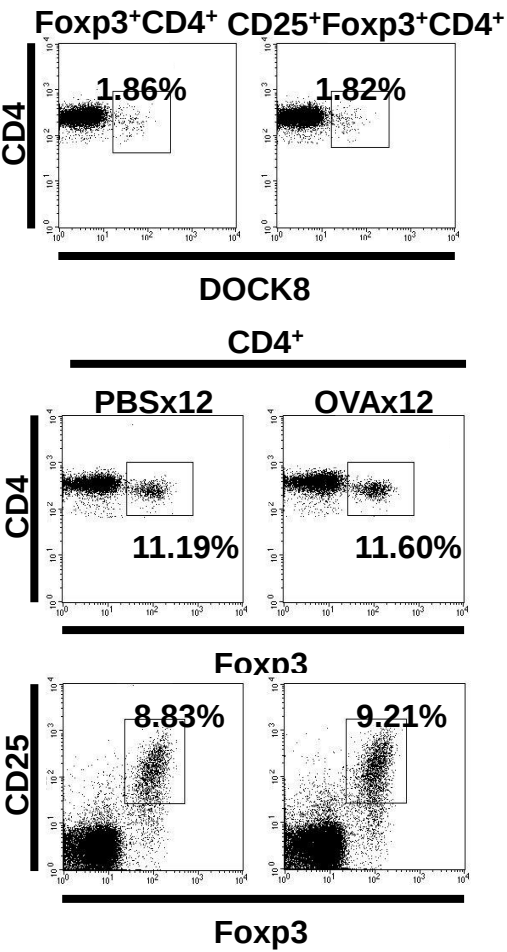
Extended Data Fig. 4

a

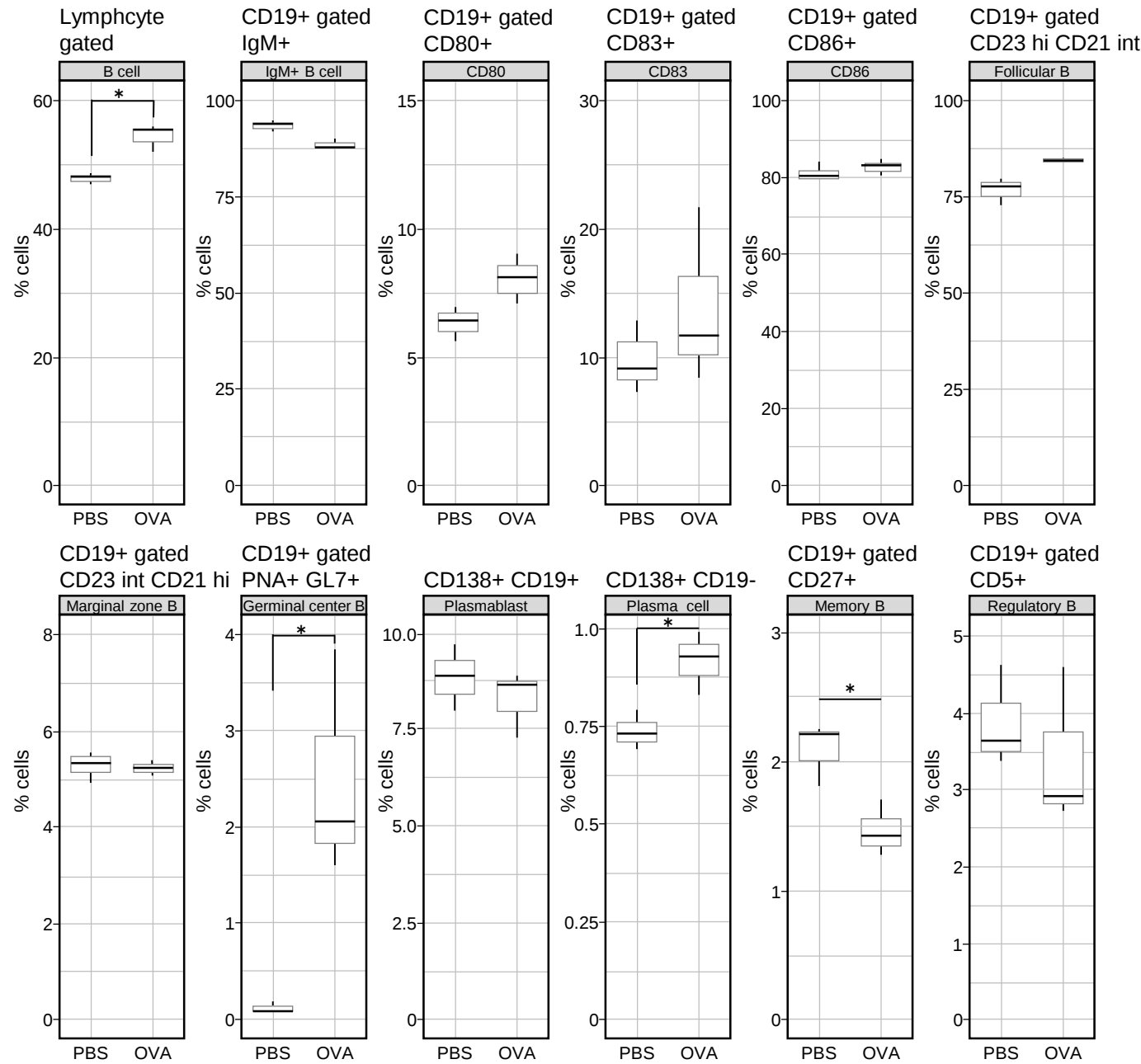


b

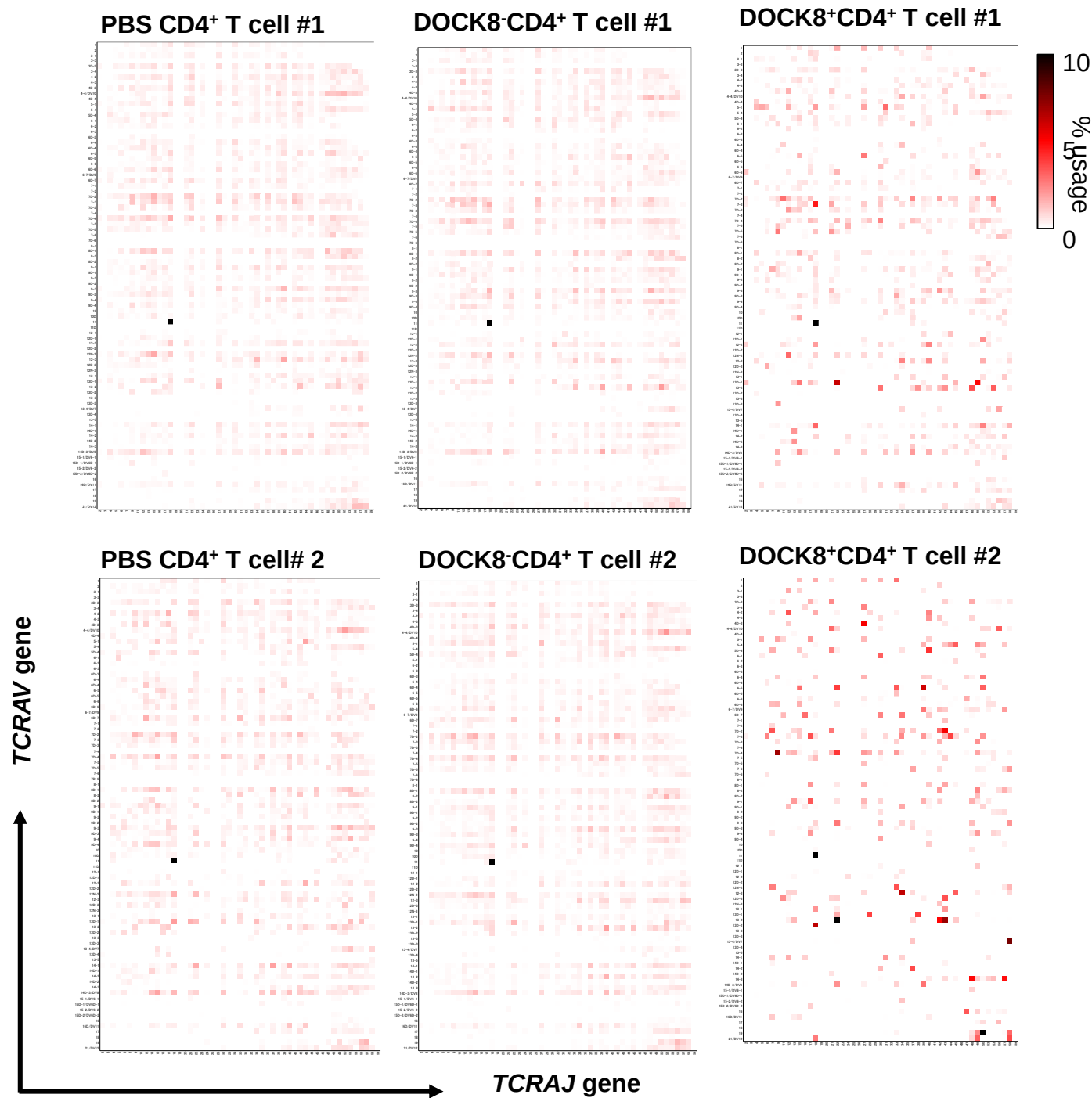
stimulated with: **OVAX12**



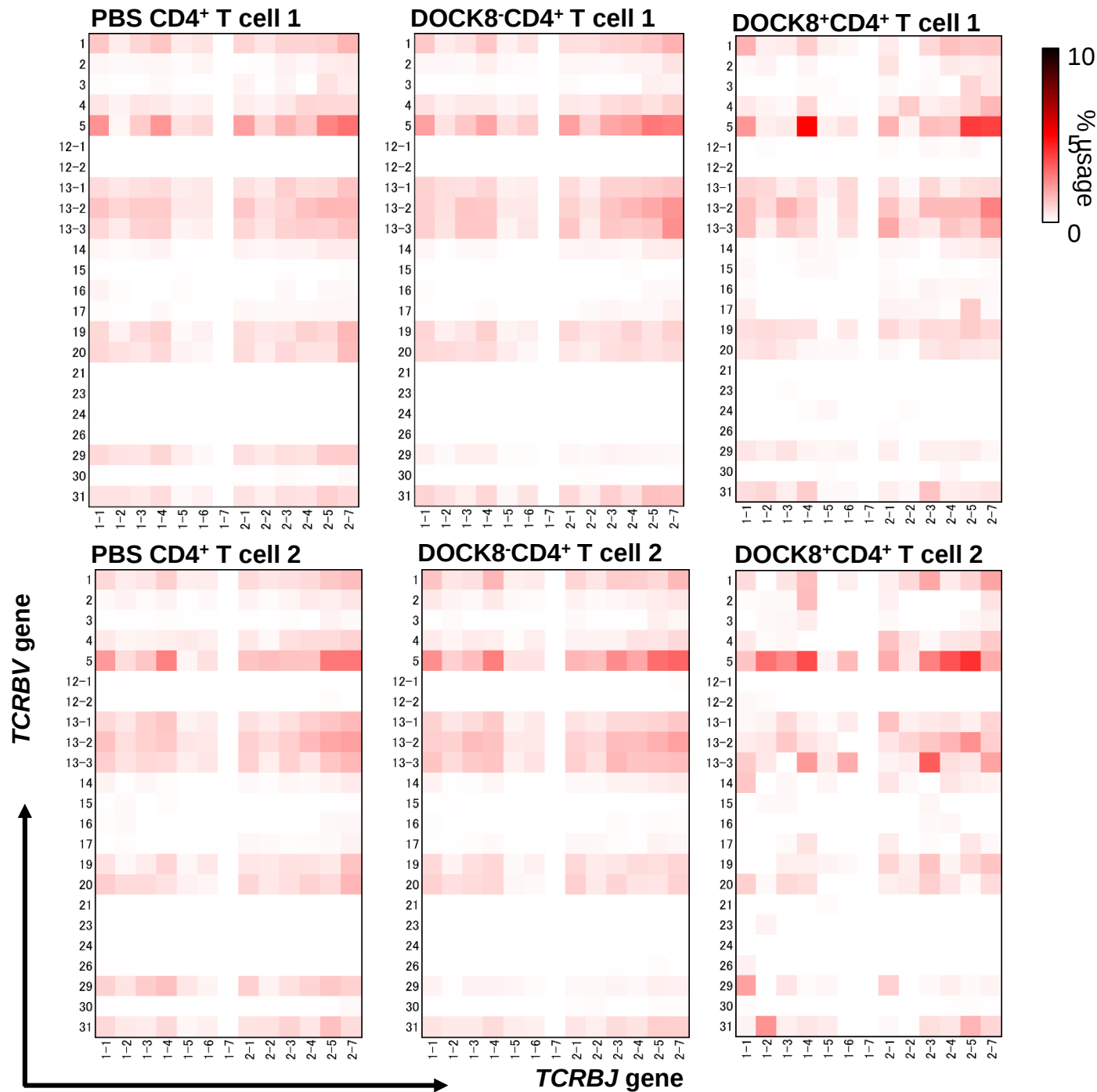
Extended Data Fig.5



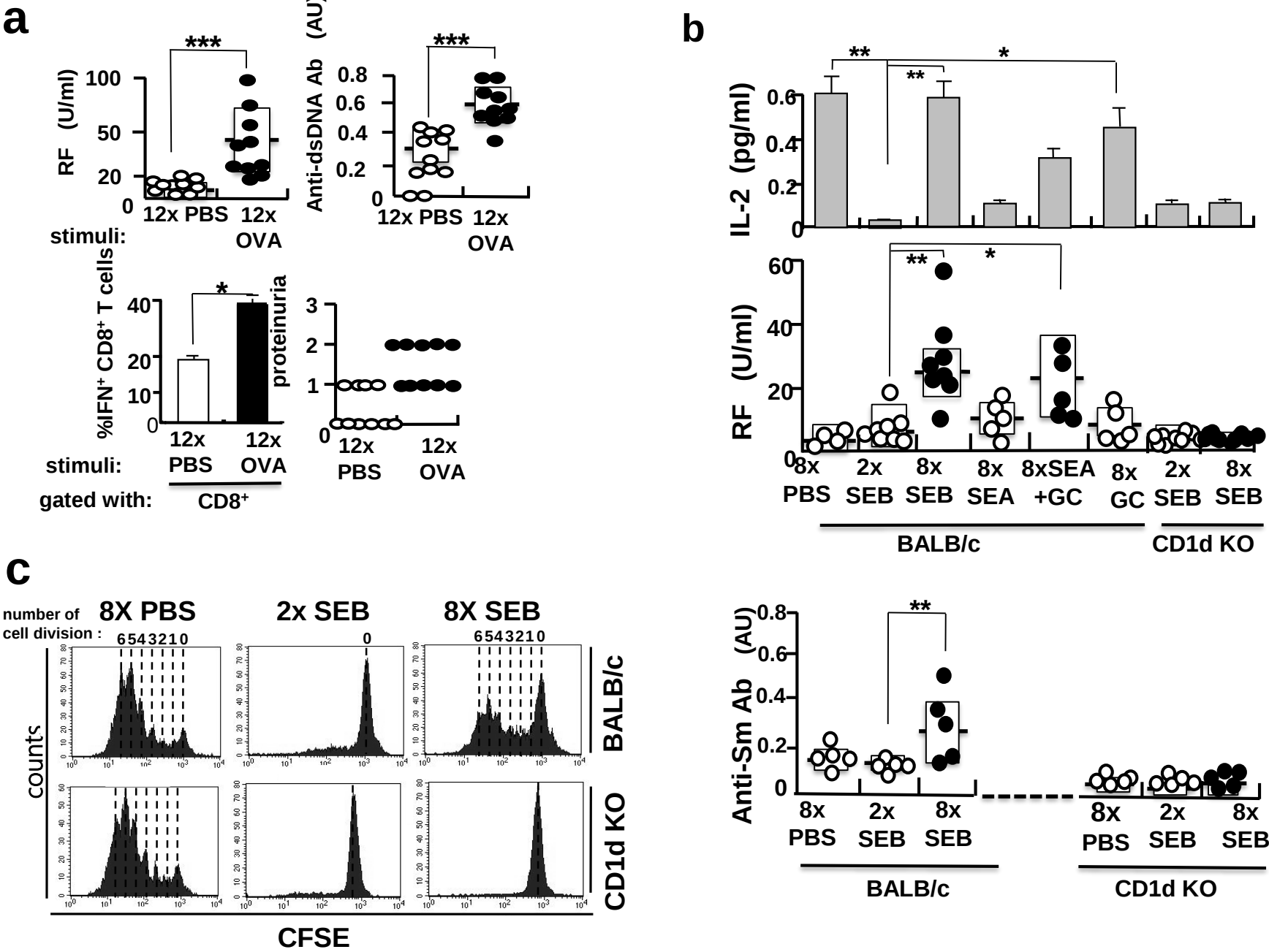
Extended Data Fig.6



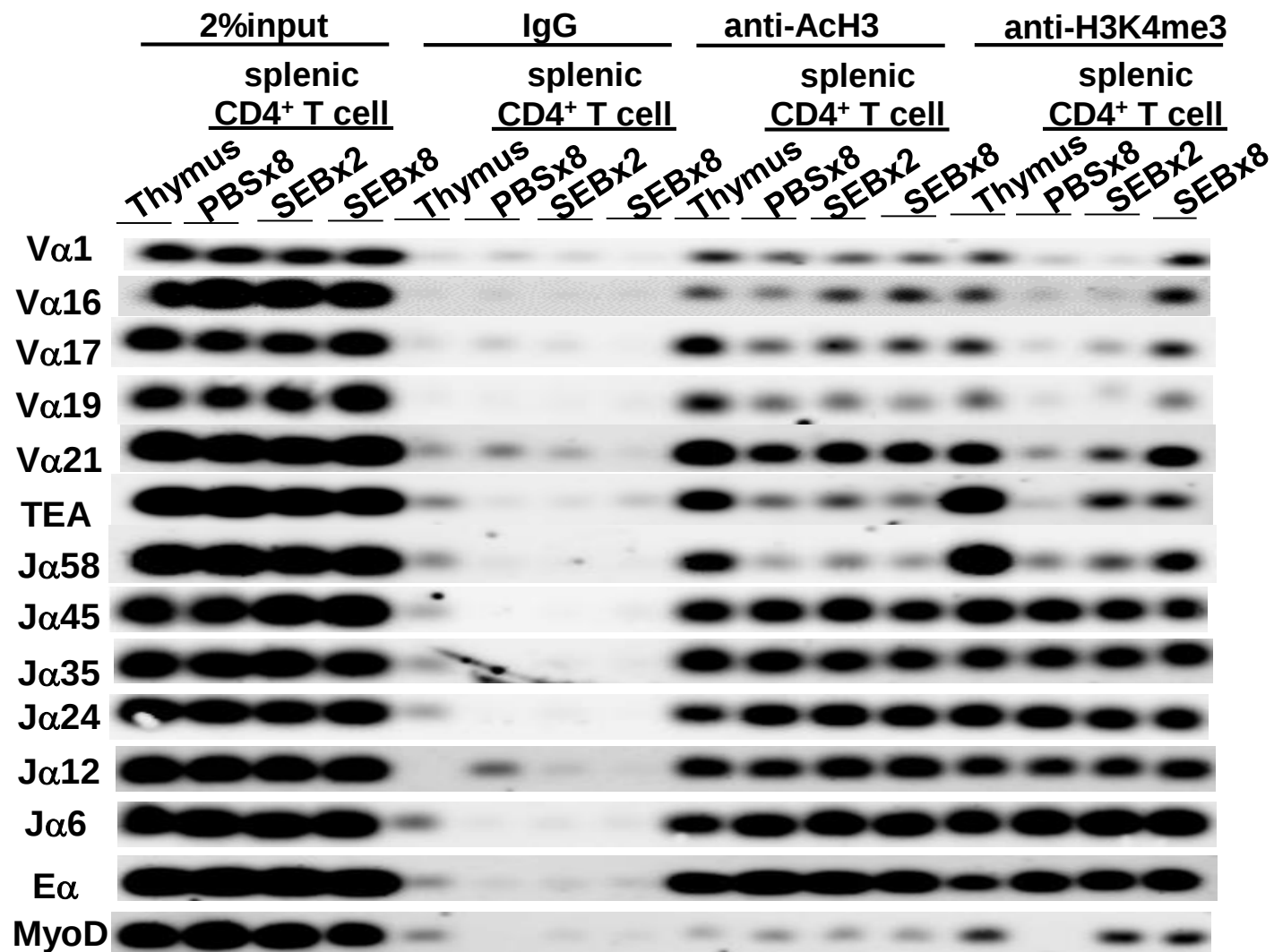
Extended Data Fig.7



Extended Data Fig. 8.

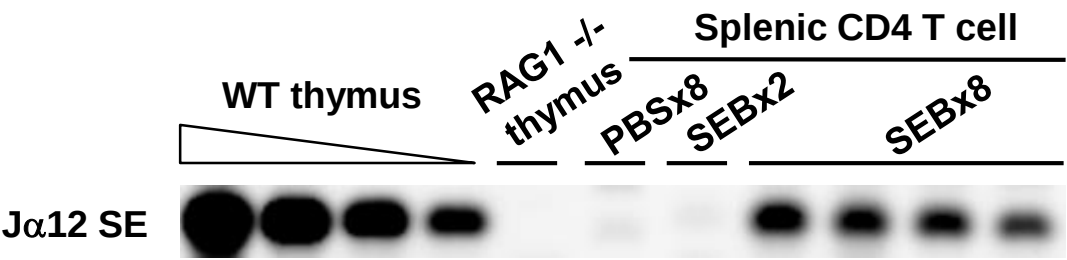


a



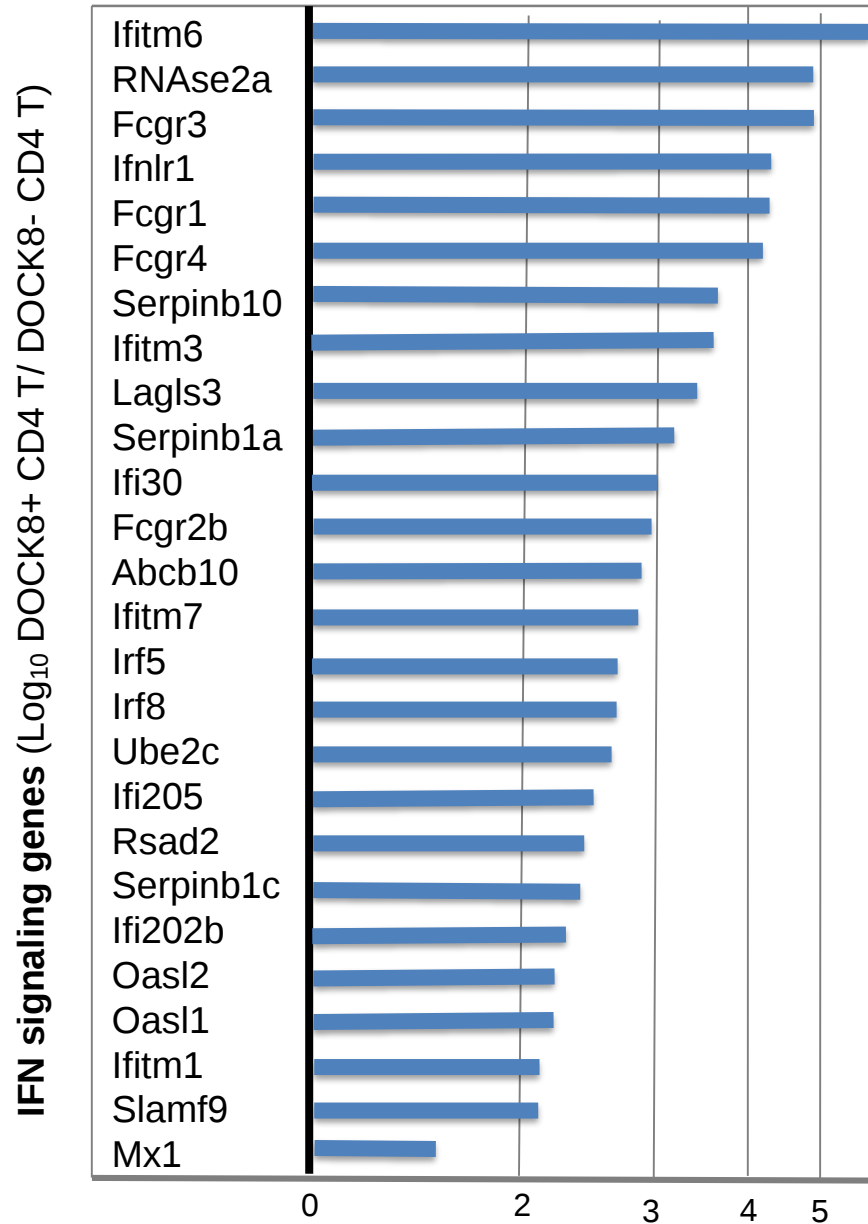
Extended Data Fig. 9

C



Extended Data Fig. 10.

a



b

