

ONLINE REPOSITORY

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Table EI. Study subject characteristics

Group	ID	Age (y)	HLA-DR typing	Alder IgE Immunocap	Prick test	Basophil test	Asthma
Allergic	AP-1	49	DR15	4	4+	positive	Yes
	AP-2	41	DR15	4	4+++	positive	No
	AP-3	26	DR15	4	4+	positive	Yes
	AP-4	37	DR15	6	4+	positive	Yes
	AP-5	33	DR15	5	4+	positive	No
	AP-6	22	DR7	5	4+	positive	No
	AP-7	39	DR7	3	4++	positive	No
	AP-8	29	DR15	3	4+	positive	Yes
	AP-9	28	DR7	4	4++	positive	Yes
	AP-10	30	DR15	4	4+	positive	No
	AP-11	26	DR15	5	4+	positive	Yes
	AP-12	34	DR15	4	4+	positive	Yes
Non-allergic	NA-1	24	DR15	0	ND	negative	No
	NA-2	26	DR15	0	ND	negative	No
	NA-3	28	DR15	0	ND	negative	No
	NA-4	27	DR7	0	ND	negative	No
	NA-5	27	DR7	0	ND	negative	No
	NA-6	30	DR15	0	ND	negative	No
After SIT	aSIT-1	52	DR15	0	0	negative	No
	aSIT-2	35	DR15	0	1	negative	No
	aSIT-3	57	DR7	0	1	negative	Yes
	aSIT-4	44	DR15	0	ND	negative	Yes
	aSIT-5	46	DR7	0	ND	negative	No
	aSIT-6	37	DR15	0	ND	negative	No
	aSIT-7	42	DR15	0	ND	negative	No
During SIT	dSIT-1	43	DR15	5	4+	positive	Yes
	dSIT-2	40	DR15	3	4+	positive	Yes

Table E2: Sequence of the Aln g 1 peptide library.

Peptide #	Amino acid sequences	Position
1	MGVFNIEAETPSVIPAAARLF	1-20
2	ETPSVIPAAARLFKAFILDGD	9-28
3	ARLFKAFILDGDKLLPKVAP	17-36
4	LDGDKLLPKVAPEAVSSVEN	25-44
5	KVAPEAVSSVENIEGNGGPG	33-52
6	SVENIEGNGGPGTIKKITFP	41-60
7	GGPGTIKKITFPPEGSPFKYV	49-68
8	ITFPEGSPFKYVKERVDEVD	57-76
9	FKYVKERVDEVDRVNFKYSF	65-84
10	DEVDRVNFKYSFSVIEGGAV	73-92
11	KYSFSVIEGGAVGDALEKVC	81-100
12	GGAVGDALEKVCNEIKIVAA	89-108
13	EKVCNEIKIVAAPDGGSSILK	97-116
14	IVAAPDGGSSILKISNKFHTK	105-124
15	SILKISNKFHTKGDHEINAE	113-132
16	FHTKGDHEINAEQIKIEKEK	121-140
17	INAEQIKIEKEKAVGLLKAV	129-148
18	EKEKAVGLLKAVESYLLAHS	137-156
19	AVGLLKAVESYLLAHSDAVN	141-160

Table E3: Minimal DRB1*07:01 and DRB1*15:01-restricted AIn g 1 T cell epitopes.

HLA	AIn g 1 epitope	Sequence
DRB1*07:01	AIn g 1 ₇₆₋₈₈	DRVNFKYSFSVIE
DRB1*07:01	AIn g 1 ₁₄₂₋₁₅₄	VGLLKAVESYLLA
DRB1*15:01	AIn g 1 ₁₄₂₋₁₅₄	VGLLKAVESYLLA

SUPPLEMENTARY FIGURE LEGENDS

Figure E1: Alder pollen counts in the Seattle area in 2010. The count indicated refers to the number of pollen grains per cubic meter according to the National Allergy Bureau.

Fig E2: Representative flow cytometry plots showing co-production of IFN- γ and IL-4 (left) or IFN- γ and IL-10 (right) by Aln g 1-specific CD4⁺ T cells from allergic (**A**) or non-allergic individuals (**B**).

Fig E3: A, Representative overlay of CD27⁺ Aln g 1-specific CD4⁺ T cells (*black*) on total CD4⁺ T cells (*grey*) showing *ex vivo* staining with a panel of antibodies in allergic subjects. **B,** Representative overlay of CD27⁺ Aln g 1-specific CD4⁺ T cells (*black*) on total CD4⁺ T cells (*grey*) showing cytokine production in allergic subjects.

Figure E4: Allergen-SIT is associated with a decrease in the CD27⁻/CD27⁺ allergen-specific CD4⁺ T cell ratio. **A,** Mean \pm SEM of the CD27⁻/CD27⁺ allergen-specific CD4⁺ T cell ratio in allergic individuals (open circles) and allergen-SIT-treated patients (filled circles) at multiple time points. **B,** *Ex vivo* longitudinal frequency of CD27⁻ (filled symbols) and CD27⁺ (open symbols) Aln g 1-specific CD4⁺ T cells from patient #dSIT-1 (circle) and patient #dSIT-2 (square) during allergen-SIT.

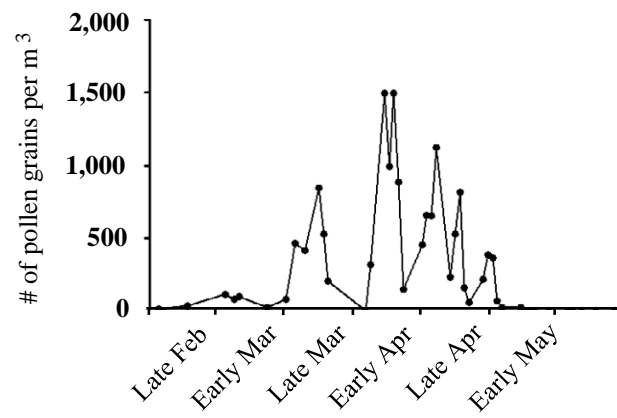
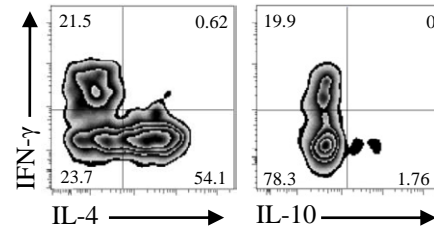


Figure E1

A



B

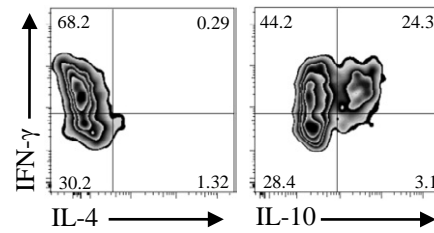


Figure E2

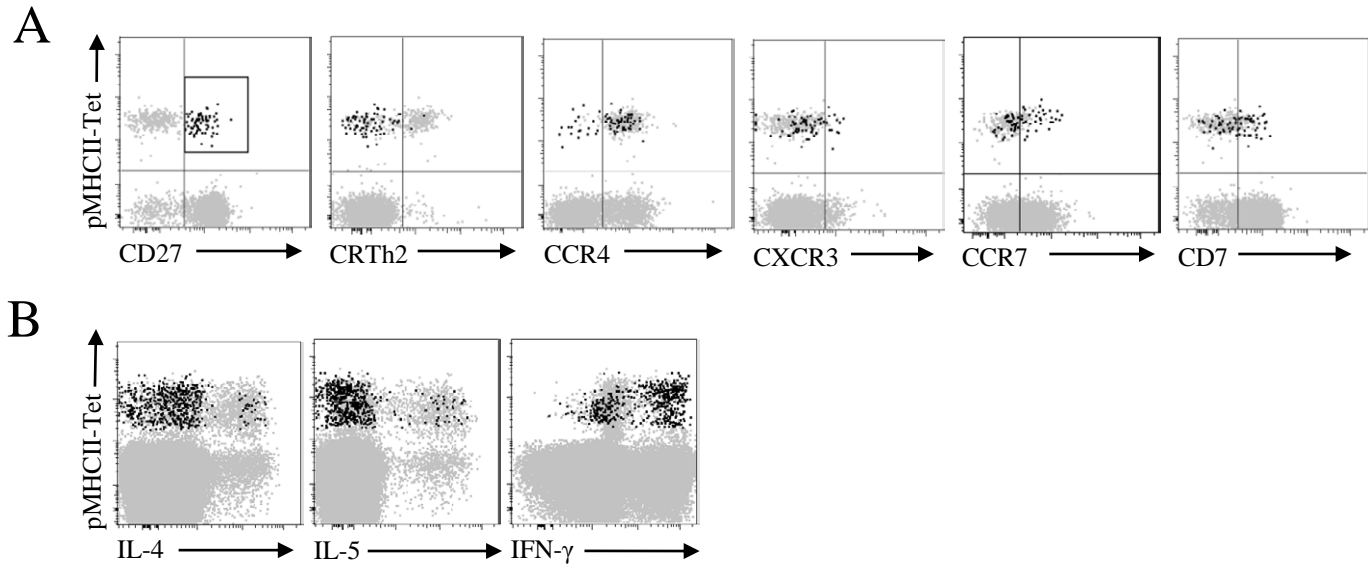


Figure E3

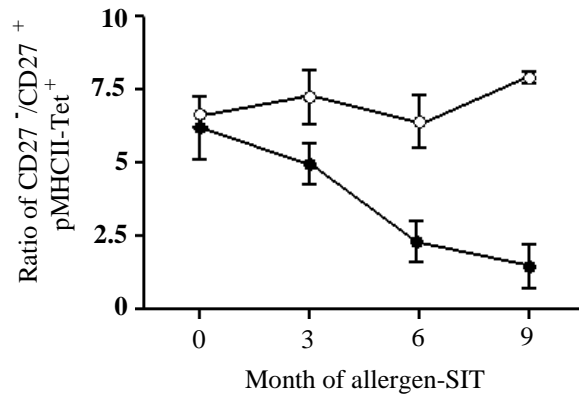
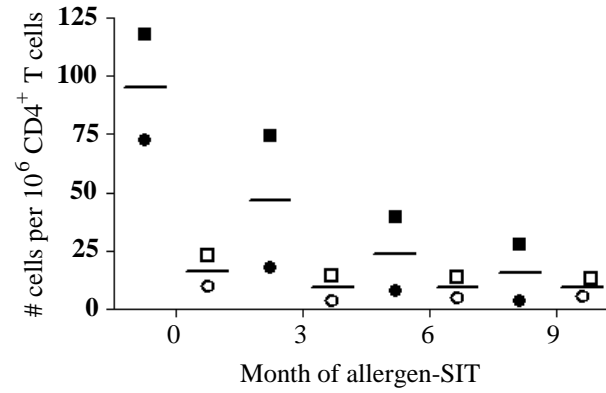
A**B**

Figure E4