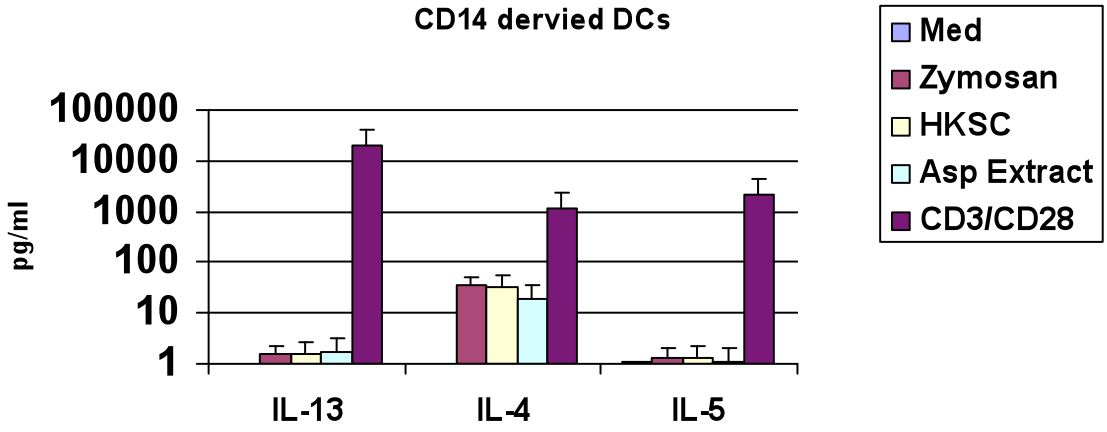
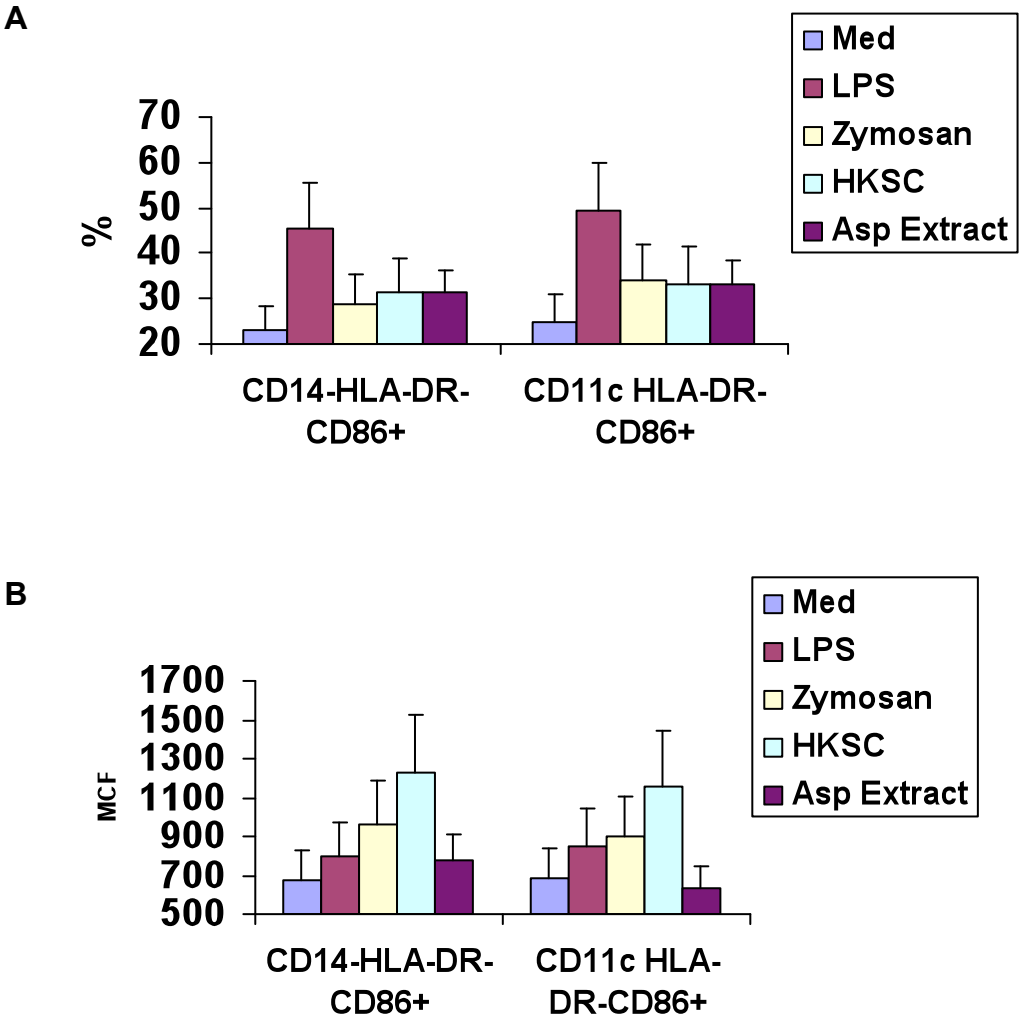
Supplementary Figure 1



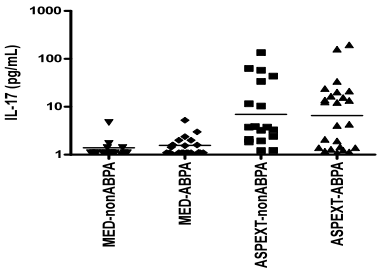
CD14+ DCs elicit poor Th2 responses in patients with ABPA. CD14+ DCs were grown in GM-CSF and IL-4 for 6 days from patients with confirmed ABPA (n=9) and pulsed with media, zymosan, HKSC, Asp Extract. CD4+ T-cells were added to DCs or stimulated with CD3/CD28 beads for 96 hours. Supernatants were harvested and analyzed by Luminex for IL-4, IL-5, or IL-13 production.

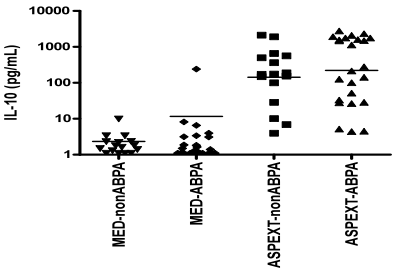
Supplementary Figure 2

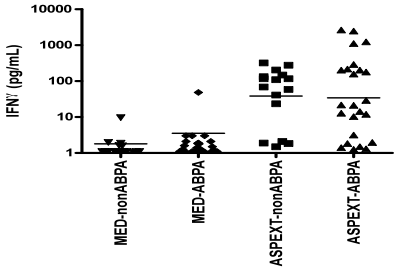


A. Relative percentages of HLA-DR+ CD86+ cells in CD14+ or CD11c+ DCs after stimulation with LPS, Zymosan or Asp Extract (n=9 each group). There were no statistical differences in the percentage of HLA-DR+ CD86+ cells between CD14+ or CD11c+ DCs. B. Mean channel fluorescence of CD86 in CD14+ versus CD11c+ DCs after various treatments (n=9 per group).

Supplementary Figure 3

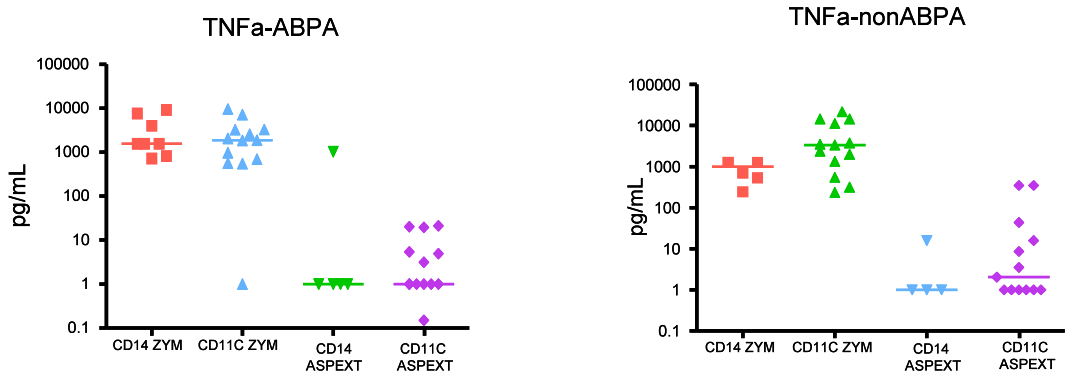






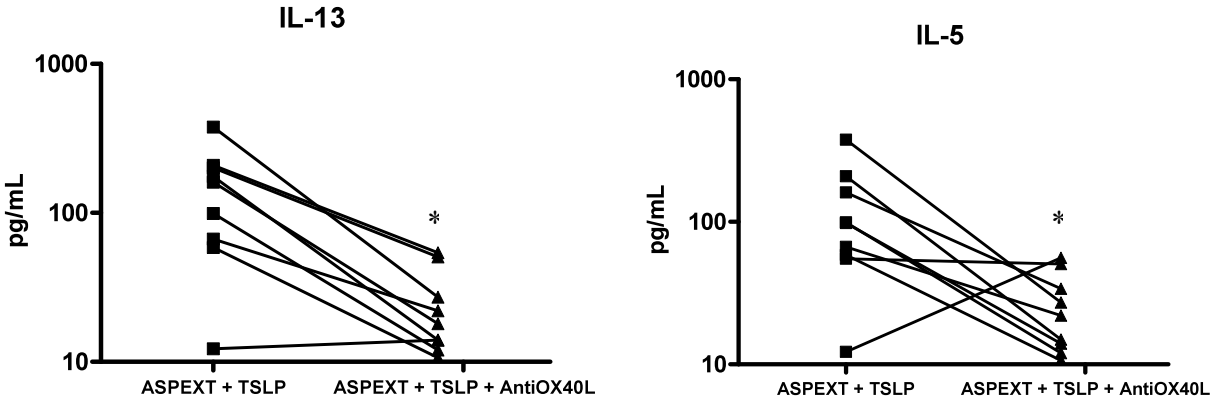
CD11c+ DCs (n=16) from gender matched patients with documented Af colonization with out ABPA (Non-APBA) or CD11c+ DCs (n=24) from patients with confirmed ABPA were pulsed with media (not shown), Asp Extract. CD4+ T-cells were added to DCs for 96 hours. Supernatants were harvested and analyzed by Luminex for IL-17, IL-10, or IFNγ production.

Supplementary Figure 4



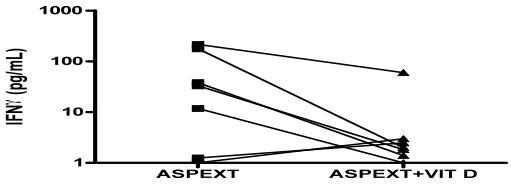
CD14+ DCs (n=6) grown in GM-CSF and IL-4 for 6 days, or CD11c+ DCs (n=19) from patients with confirmed ABPA pulsed with media (not shown), zymosan, or Asp Extract for 24 hours. Supernatants were harvested and analyzed by Luminex for TNF-α.

Supplementary Figure 5

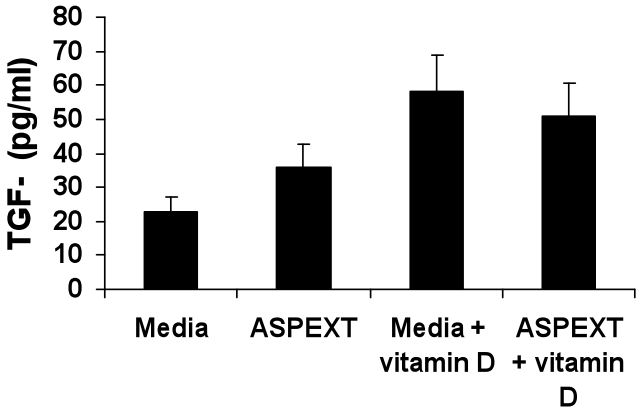


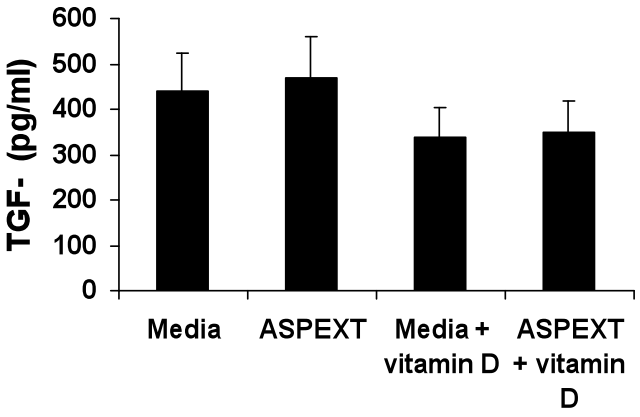
CD11c+ DCs with (n=7) from patients with non-ABPA were treated with TSLP (5 ng/ml) and then pulsed with Asp Extract with an isotype control antibody to anti-OX40L both from (B-D, PharMingen). .Purified CD4+ T-cells were added for 96 hours. Supernatants were harvested and analyzed by Luminex for a) IL-13, and b) IL-5, production. * denotes $p < 0.05$ by Mann-Whitney.

Supplementary Figure 6



CD11c+ DCs from patients with ABPA (n=6) were pulsed with Aspergillus extract (ASPEXT) followed by addition of autologous bulk CD4+ T-cells followed by addition of 1, 25 OH-vitamin D3 or vehicle. Cells were incubated for 96 hours and IFNγ was measured in cell supernatants by Luminex. Differences in IFNγ production were non-significant.





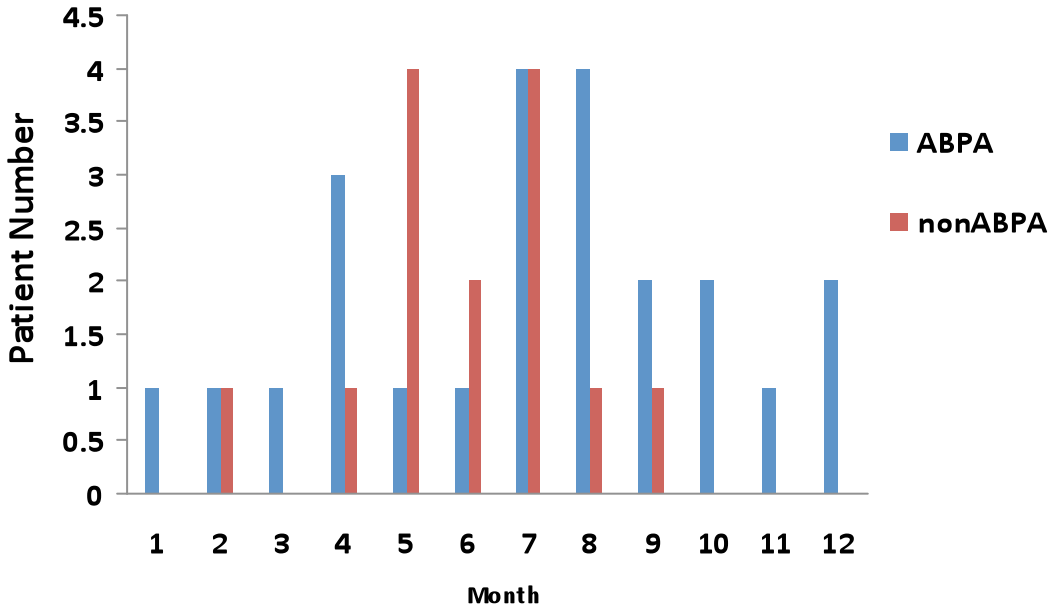
CD11c+ DCs from patients with ABPA (n=6) were pulsed with media or Aspergillus extract (ASPEXT) followed by addition of autologous bulk CD4+ T-cells followed by addition of 1, 25 OH-vitamin D3 or vehicle. Cells were incubated for 96 hours and active (left panel) and total (right panel) TGFβ was measured in cell supernatants by ELISA (R & D systems). Differences in TGFβ production were non-significant.

Supplementary Table I

	ABPA Positive	ABPA Negative	P-Value
FEV1 (L)	2.739±0.3486 (0.96-6.81)	2.120±0.3065 (0.72-4.89)	0.1875
FEV1 (% Predicted)	67.32±5.925 (31-117)	62.6± 5.689 (26-98)	0.8487
BMI	22.57±0.6364 (17.22-27.68)	21.96±1.222 (17.19-32.24)	0.2707
IgE (IU/mL)	465.6 ± **134.3** (2-2000)	151.8 ± **53.49** (7-666)	0.0341
Asp IgE (kUA/l)	16.27±4.235 (0.35-62.00)	5.168±2.35 (0.35-25.7)	0.0045
Age (years)	29.21±2.490 (19-56)	36.63±3.304 (19-62)	0.0637
Gender	**10 Males; 9 Females**	**9 Males; 7 Females**	NS
Genotype	8 homozygous ΔF508; 3 [-]/ΔF508; 2 ΔF508/2789+5G-A; 1 homozygous 711ΔT; 1ΔF508/621+1G-T; 2 ΔF508/R533X;1 [-]/G542X; 1unreported	6 homozygous ΔF508; 3 [-]/ΔF508; 1 ΔF508/R347H; 1 ΔF508/2789+5G-A; 1 G542X/[-]; 1 621+1GT/[-]; 2unreported	NS
Steroid Use	4 of 19	4 of 16	NS
Actigall Use	2 of 19	3 of 16	NS

	ABPA Positive	ABPA Negative	P-Value
Average Vitamin D (ng/mL)	20.92±10.80	32.45±16.39	0.0042
Average Vitamin A(µg/dL)	53.17±16.23	49.97±17.74	0.1531
Average Vitamin E(µg/mL)	10.49±5.31	9.569±4.046	0.6151

Supplementary Figure 7



Enrollment histogram by month between the ABPA and non-ABPA cohort.