



Supplementary Figure 1. Purified $CD4^+/CD62L^+/\alpha 4^-$ and $CD4^+/CD62L^+/\alpha 4^+$ cells from spleens (A) were cultured in vitro under Th0 and Th17 differentiation conditions (see Materials and Methods). (B) Numbers in quadrants indicate the percentage of cells with intracellular interleukin (IL)-17 or interferon- γ (IFN- γ). There are no significant differences between WT and alpha4 deficient in the proportion of cells expressing IL-17 or (C) in the levels of IL-17 in the supernatants analyzed for IFN- γ , IL-17A, and IL-4 by enzyme-linked immunosorbent assay.

Supplementary Table 1. Total numbers of nucleated cells (x10E6) in bone marrow, blood, airways, and lung (data for Fig. 2)

	Mononuclear		Neutrophils	Eosinophils	Total
BM/femur					
WT + alum	19.087 ± 2.56		10.459 ± 1.08	1.229 ± 3.38	30.775 ± 2.36
WT + OVA	16.038 ± 1.07		19.718 ± 4.96	9.394 ± 2.28	45.15 ± 1.15
$\alpha 4^{\Delta/\Delta}$ + alum	20.371 ± 3.39		14.714 ± 3.97	1.914 ± 0.46	37 ± 5.91
$\alpha 4^{\Delta/\Delta}$ + OVA	33.734 ± 5.51		29.209 ± 5.93	8.557 ± 1.75	71.5 ± 7.94
$\beta 2^{-/-}$ + alum	20.077 ± 3.78		8.874 ± 5.06	3.189 ± 11.86	32.14 ± 4.98
$\beta 2^{-/-}$ + OVA	26.180 ± 7.05		22.637 ± 8.53	12.027 ± 6.97	60.845 ± 3.08
PB/2 ml	Lymphocytes	Monocytes	Basophils		
WT + alum	4.231 ± 1.12	0.529 ± 0.07	0.132 ± 0.07	3.487 ± 1.96	8.95 ± 0.35
WT + OVA	6.616 ± 0.86	2.214 ± 0.67	0.117 ± 0.06	5.062 ± 0.75	17.167 ± 2.32
$\alpha 4^{\Delta/\Delta}$ + alum	4.378 ± 0.94	3.079 ± 0.86	0.000 ± 0.00	4.247 ± 0.27	11.864 ± 1.07
$\alpha 4^{\Delta/\Delta}$ + OVA	7.594 ± 1.07	3.379 ± 0.83	0.062 ± 0.07	5.050 ± 1.06	20.064 ± 8.65
$\beta 2^{-/-}$ + alum	34.425 ± 7.85	6.799 ± 1.58	0.258 ± 0.01	26.766 ± 8.86	74.1 ± 15.61
$\beta 2^{-/-}$ + OVA	53.328 ± 7.97	9.929 ± 2.97	0.723 ± 0.97	46.358 ± 11.96	133.814 ± 64.96
BALf/2lungs			Macrophages		
WT + alum	0.003 ± 0.0001	0.030 ± 0.0007	0.023 ± 0.005	0.003 ± 0.0001	0.06 ± 0.003
WT + OVA	1.778 ± 0.265	0.466 ± 0.18	1.409 ± 0.067	1.040 ± 0.003	5.6 ± 0.48
$\alpha 4^{\Delta/\Delta}$ + alum	0.029 ± 0.0074	0.017 ± 0.001	0.009 ± 0.0001	0.005 ± 0.0001	0.06 ± 0.001
$\alpha 4^{\Delta/\Delta}$ + OVA	0.566 ± 0.0076	0.130 ± 0.056	0.176 ± 0.007	0.379 ± 0.072	1.314 ± 0.013
$\beta 2^{-/-}$ + alum	0.107 ± 0.007	0.594 ± 0.024	0.715 ± 0.023	0.041 ± 0.001	1.456 ± 0.039
$\beta 2^{-/-}$ + OVA	0.658 ± 0.003	0.258 ± 0.131	1.312 ± 0.244	0.941 ± 0.002	3.22 ± 0.78
LP/lung					
WT + alum	0.442 ± 0.012	0.192 ± 0.007	0.106 ± 0.004	0.356 ± 0.003	1.096 ± 0.023
WT + OVA	0.636 ± 0.154	0.158 ± 0.023	0.193 ± 0.023	0.476 ± 0.001	1.777 ± 0.164
$\alpha 4^{\Delta/\Delta}$ + alum	0.304 ± 0.054	0.108 ± 0.024	0.031 ± 0.0001	0.304 ± 0.001	0.747 ± 0.003
$\alpha 4^{\Delta/\Delta}$ + OVA	0.525 ± 0.12	0.241 ± 0.001	0.388 ± 0.005	0.506 ± 0.002	2 ± 0.045
$\beta 2^{-/-}$ + alum	0.226 ± 0.03	0.094 ± 0.0002	0.033 ± 0.0001	0.247 ± 0.007	0.6 ± 0.002
$\beta 2^{-/-}$ + OVA	0.894 ± 0.002	0.486 ± 0.003	0.301 ± 0.002	2.287 ± 0.56	4.66 ± 0.893

Alum = aluminium sulfate; BM = bone marrow; LP = lung parenchyma; OVA = ovalbumin; PB = peripheral blood; WT = Wild Type, Numbers in bold indicate $p < 0.01$.

Supplementary Table 2. Concentrations of cytokines in bronchoalveolar lavage fluid and plasma post-ovalbumin in control, $\alpha 4^{\Delta/\Delta}$, and $\beta^{-/-}$ mice and concentrations of ovalbumin-specific immunoglobulins E and G₁ in plasma of ovalbumin-treated mice (data for Fig. 4)

	TNF- α (pg/mL)	IFN- γ (pg/mL)	IL-2 (pg/mL)	IL-4 (pg/mL)	IL-5 (pg/mL)	IL-13 (pg/mL)	Eotaxin (pg/mL)
BALf							
Control	2307.6 \pm 34.98	26.7 \pm 12.09	42.6 \pm 3.97	216.0 \pm 2.17	94.1 \pm 2.87	713.8 \pm 29.27	588.8 \pm 65.44
$\alpha 4^{\Delta/\Delta}$	96.3 \pm 2.8	22.5 \pm 1.08	24.9 \pm 2.99	96.4 \pm 3.89	40.7 \pm 7.09	474.6 \pm 90.59	298.4 \pm 16.8
$\beta^{-/-}$	909 \pm 9.09	26.4 \pm 3.98	15.5 \pm 1.5	214.2 \pm 2.14	67.5 \pm 6.75	855.8 \pm 45.9	274.2 \pm 5.29
Plasma							
Control	487.6 \pm 8.47	3.5 \pm 1.6	12.6 \pm 1.98	149.2 \pm 1.87	47.2 \pm 4.87	875.5 \pm 30.3	645.6 \pm 23.97
$\alpha 4^{\Delta/\Delta}$	296.6 \pm 2.8	4.4 \pm 1.8	18.3 \pm 1.65	84.3 \pm 1.64	28.1 \pm 2.75	772.2 \pm 118.3	218.7 \pm 122.06
$\beta^{-/-}$	582.3 \pm 5.53	3.3 \pm 1.05	11.0 \pm 0.64	113.6 \pm 1.98	27.2 \pm 4.56	535.1 \pm 123	403.5 \pm 74.90
IgE and IgG₁							
	IgE (μ g/mL)	IgG ₁ (μ g/mL)					
Control	25.9 \pm 0.25	15.9 \pm 0.39					
$\alpha 4^{\Delta/\Delta}$	8.5 \pm 0.43	18.9 \pm 0.42					
$\beta^{-/-}$	21.7 \pm 2.65	26.1 \pm 1.91					

BALf = bronchoalveolar lavage fluid; IFN- γ = interferon- γ ; IgE = immunoglobulin E; IgG₁ = immunoglobulin G₁; IL = interleukin; TNF- α = tumor necrosis factor- α .

Numbers in bold indicate $p < 0.01$.