Supplementary Figure 1. IL-17 production in spleens and lungs after stimulation with *B. pertussis* antigens. Splenocytes (A) and lung cells (B) from naïve mice or mice vaccinated once with BPZE1 or twice with aPV as indicated were stimulated with FHA, PTX or pertactin (Prn) for 72 h and IL-17 concentrations were measured in the supernatants. *, *p*<0.05; ***, *p*<0.001.
Supplementary Figure 2

(A) IgG1

(B) IgG2a

(C) IgG2b

(D) IgG3
Supplementary Figure 2. Serum IgG isotype induced by BPZE1 or aPV in C57BL/6 mice. C57BL/6 mice were vaccinated once with BPZE1, twice with aPV or were left unvaccinated (Naïve) as indicated. Eight weeks after the first vaccination mice were sacrificed and serum was collected. Total IgG1 (A), IgG2a (B), IgG2b (C) and IgG3 (D) titers were measured against BPSM lysate protein extract. **, $p<0.01$; ***, $p<0.001$ by 1-way ANOVA and Bonferroni post-hoc test.
Supplementary Figure 3. FHA-, PTX-, and pertactin-specific serum IgG and IgA induced by BPZE1 or aPV in Balb/c mice. Balb/c mice were vaccinated once with BPZE1, twice with aPV or were left unvaccinated (Naïve) as indicated. Eight weeks after the first vaccination mice were sacrificed and serum was collected. IgG1 (A-C) and IgA (D-F) titers were measured against FHA (AF). **, p<0.01; ***, p<0.001 by 1-way ANOVA and Bonferroni post-hoc test.
Supplementary Figure 4

A) IgG against FHA

B) IgG against PTX

C) IgG against Prn

D) IgA against FHA

E) IgA against PTX

F) IgA against Prn
Supplementary Figure 4. FHA-, PTX-, and pertactin-specific serum IgG and IgA induced by BPZE1 or aPV in C57BL/6 mice. C57BL/6 mice were vaccinated once with BPZE1, twice with aPV or were left unvaccinated (Naïve) as indicated. Eight weeks after the first vaccination mice were sacrificed and serum was collected. IgG1 (A-C) and IgA (D-F) titers were measured against FHA (AF). *, p<0.05; **, p<0.01; ***, p<0.001 by 1-way ANOVA and Bonferroni post-hoc test.
Supplementary Figure 5. IgA titers in nasal washes 10 months after BPZE1 vaccination or in Il17−/− mice. (A) Balb/c and C57BL/6 mice were vaccinated once with BPZE1 or left unvaccinated (Naïve) as indicated. Ten months later, IgA titers against total B. pertussis cell lysate were measured in the nasal washes. (B) Il17−/− mice were vaccinated once with BPZE1 or left unvaccinated (Naïve) as indicated. Eight weeks later, IgA titers against total B. pertussis cell lysate were measured in the nasal washes. n.s., not significant.