Online Supplemental Material

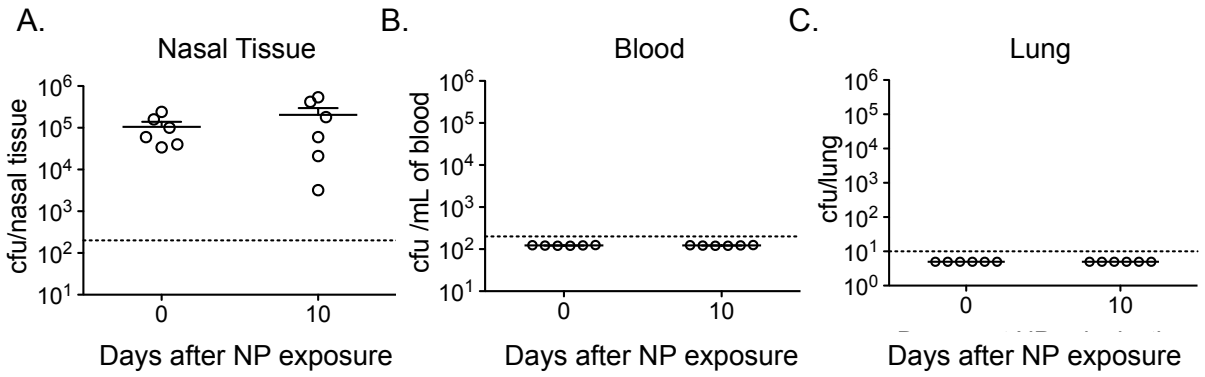

Figure S1. Intranasal inoculation does not cause infection of the bloodstream or the lungs. At the time of i.n. inoculation (day 0) or 10 days later with *S. pneumoniae* TIGR4, 8 to 10 week-old C57BL/6 mice were sacrificed and CFU in nasal tissue, blood or lung homogenates were enumerated. Each point represents an individual mouse in the group and dotted lines represent limit of detection.

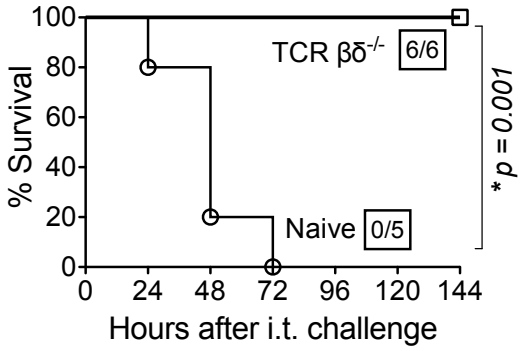

Figure S2: T cells are not required for protection from i.p. challenge after systemic immunization with heat-killed whole *S. pneumoniae.* 8 to 10 week-old T cell-deficient mice (TCRβxδ-/-) were i.p.-immunized with 10^7 CFU of heat-killed TIGR4, then i.p.-challenged with 100 CFU two weeks later. Survival was assessed at the indicated time points after challenge. Fractions denote survivors over the total number of mice, and asterisks indicate statistical significance ($p<0.05$) by the log-Rank (Mantel-Cox) test.

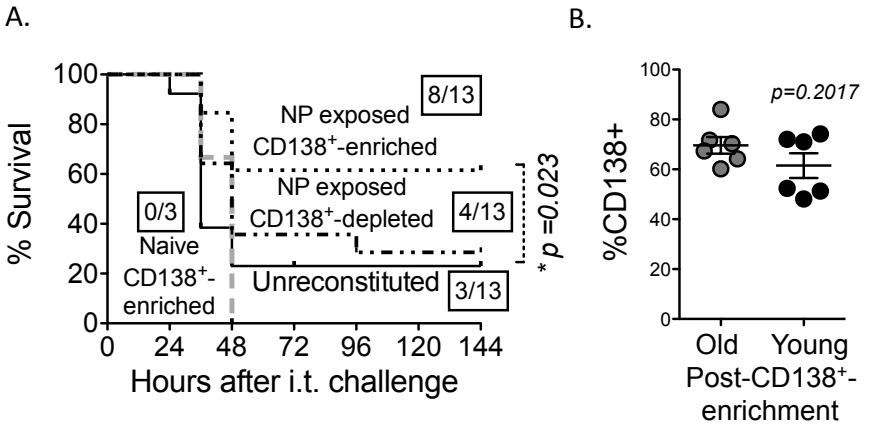

Figure S3: CD138$^+$-enriched cells from naïve mice are not protective against lung challenge. (A) Young (2-month-old) and old (20-22 month-old) C57BL/6 male mice were NP exposed to *S. pneumoniae* TIGR4, the bone marrow harvested and enriched for the CD138$^+$ fraction by labeling with α-CD138 biotinylated antibodies followed by magnetic enrichment using streptavidin (SA)-conjugated magnetic beads. The enriched fractions were also labeled with APC-conjugated SA and the percentage of CD138$^+$ cells determined by flow cytometry. (B) Bone marrow cells from naïve and NP exposed young mice were enriched or depleted for CD138$^+$ cells and transferred into mice pre-treated with 5-flurouracil. Mice were then challenged i.t. with 2.5x10^4 CFU of *S. pneumoniae* TIGR4. Survival was assessed at the indicated time points after challenge. Fractions denote survivors over the total number of mice. Asterisks indicate a statistical significance (p<0.05) by the log-Rank (Mantel-Cox) test. Data were pooled from three independent experiments.

A.

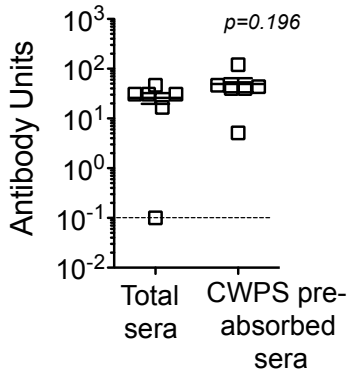

Figure S4: Pre-absorbtion with cell wall polysaccharides does not significantly impact detection of anti-PPS4 antibodies. Three weeks after a series of three i.n. inoculations of 8-week-old C57BL/6 mice with *S. pneumoniae* TIGR4, IgG responses to purified polysaccharide serotype 4 (PPS 4) from whole serum or serum preabsorbed with cell wall polysaccharides were analyzed by ELISA. Antibody units were calculated based on a hyperimmune standard included in each ELISA plate. Each point represents an individual mouse and the dotted line represents limit of detection. Data were pooled from two independent experiments.