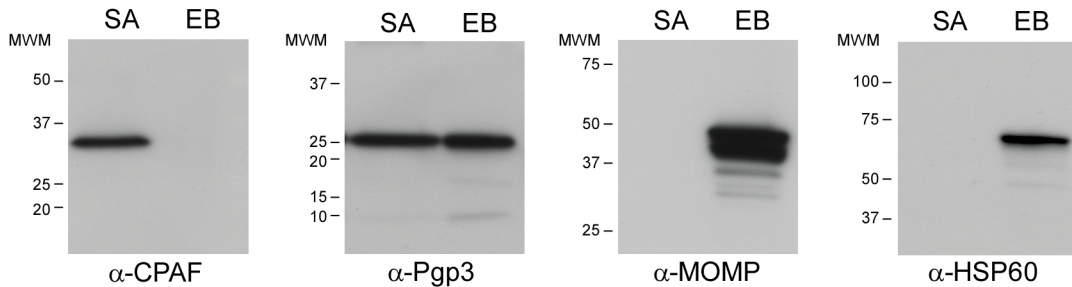


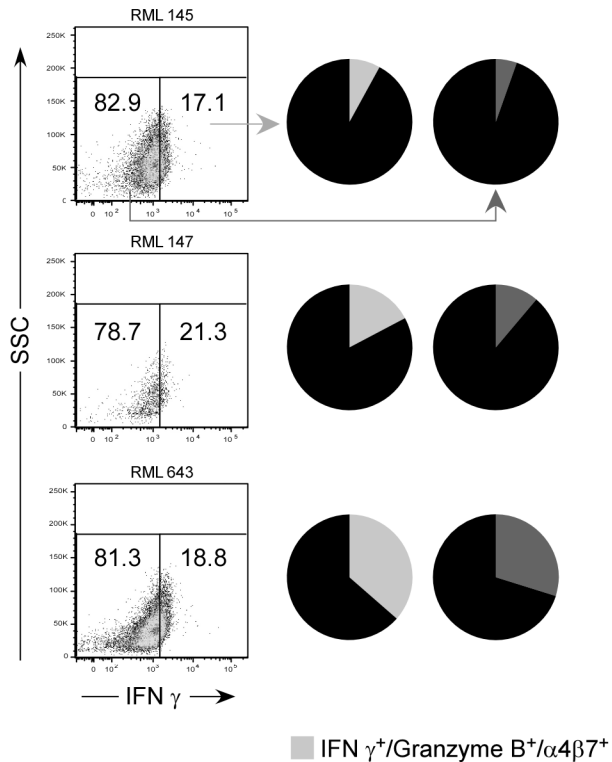
**Figure S1. A schematic illustration of the experimental design used in this study.**

The cynomolgus macaques described in the initial study were used (7). After two years of rest (time= 0), animals were repeatedly boosted with a simultaneous intramuscular/ocular dose of LATV (filled triangles). Eight weeks after the second booster immunization, macaques were challenged ocularly with a ten fold higher dose of the virulent plasmid-bearing *C. trachomatis* strain A2497P+ (filled arrow). To evaluate the CD8<sup>+</sup> T cell function in the LATV conferred protection, SP macaques received a subcutaneous injection of an anti-CD8 rhesus recombinant antibody (open squares). Three weeks following the initial injection, animals received a second dose of anti-CD8 antibody (open square) and simultaneously were ocularly challenged with  $2 \times 10^4$  IFU/eye (open arrow).

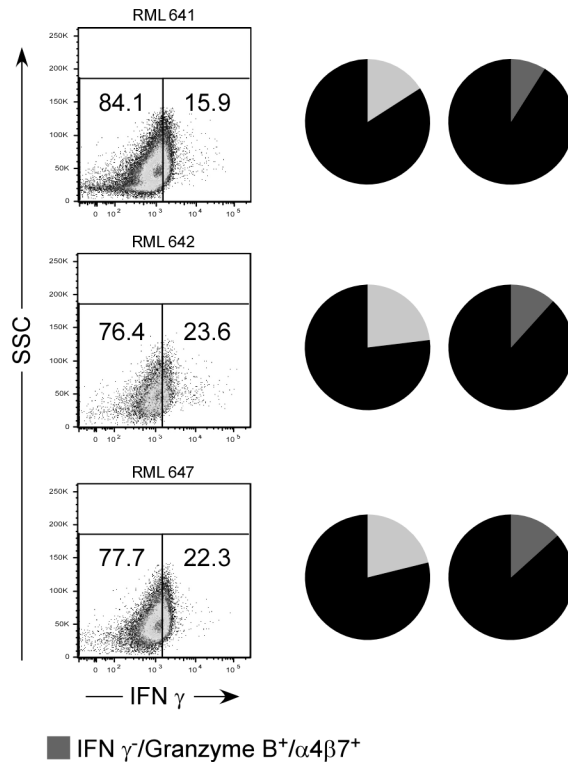


**Figure S2. Western blots of *C. trachomatis* A2497 SA and EBs probed with monoclonal antibodies specific for chlamydial secreted and structural antigens.** Western blotting of SA and EBs probed with Mabs specific to chlamydial protease activity factor (anti-CPAF), plasmid-encoded Pgp3 protein (anti-Pgp3), serovar A major outer membrane protein (anti-MOMP), and chlamydial heat shock protein 60 (anti-HSP60). Note that the secreted chlamydial protease CPAF is found primarily in the SA antigen preparation.

A



B



**Figure S3. Chlamydial CD8<sup>+</sup> T cells responding to SA express IFN- $\gamma$ , granzyme B and  $\alpha 4\beta 7$  integrin.** CFSE-PBMC antigen stimulated for five days and re-stimulated for additional six hours were subjected to a multi-color flow cytometry assay. Frequencies for CD8<sup>+</sup> antigen-specific IFN- $\gamma$ <sup>+</sup>,  $\alpha 4\beta 7$ <sup>+</sup>, Granzyme B<sup>+</sup> and IFN- $\gamma$ <sup>+</sup>,  $\alpha 4\beta 7$ <sup>+</sup> Granzyme B<sup>+</sup> responses were determined. The percentages of these T cell phenotypes found in PP (Fig. S3A) and SP (Fig. S3B) animals are shown in the pie charts. No differences in the frequency of individual surface markers or a combination of markers in SA stimulated CD8<sup>+</sup> T cells were detected between the groups.