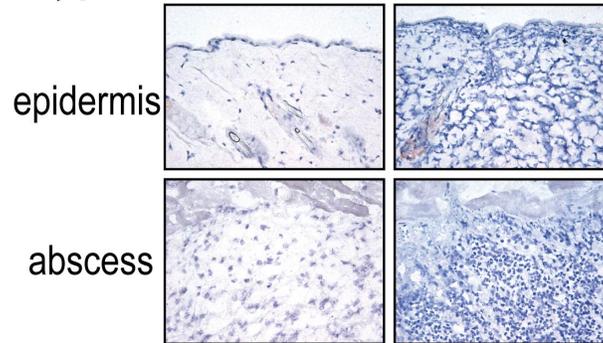
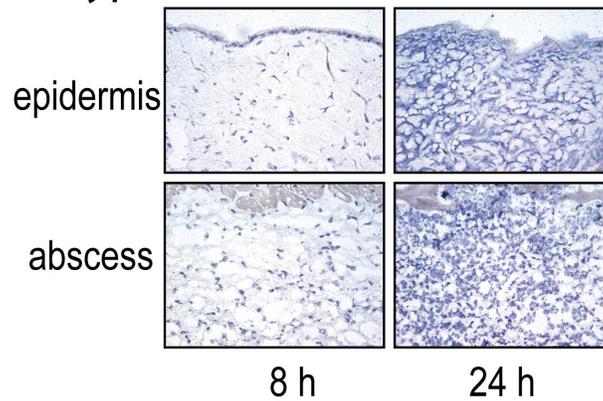


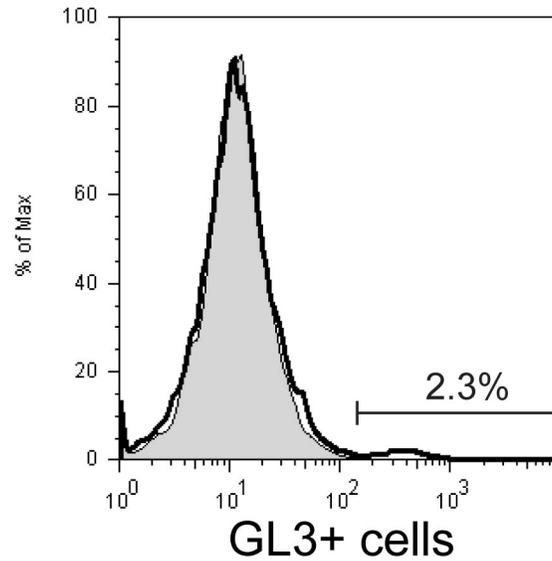
### Isotype control for anti-CD3 mAb



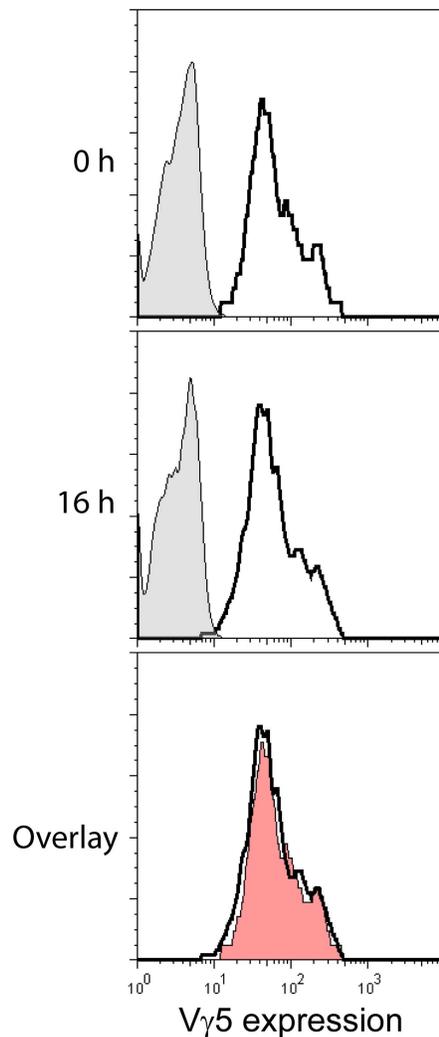
### Isotype control for GL3 mAb



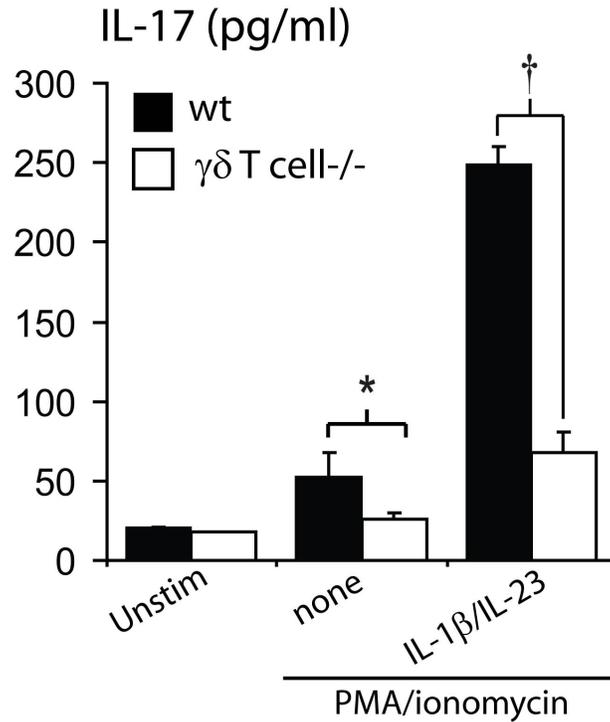
**Supplemental Figure 1.** Isotype controls for representative photomicrographs of histologic sections of wt mice after *S. aureus* infection presented in Figure 4. (A) Representative photomicrographs (400x) labeled with isotype control mAbs for CD3 (upper panels) and  $\gamma\delta$  T cells (GL3) (lower panels) (immunoperoxidase method) of histologic sections from skin biopsies from wt mice performed at 8 and 24 h after skin inoculation with *S. aureus* ( $2 \times 10^6$  CFUs in 100  $\mu$ l PBS). There were no positively-labeled cells in any of the isotype control histologic sections for either the anti-CD3 mAb or the GL3 mAb.



**Supplemental Figure 2.** Total proportion of  $\gamma\delta$  T cells in skin. Normal mouse skin was digested with collagenase (1 mg/ml) for 1 h at 37°C. Dead cells were removed by density gradient separation (Lympholyte M). Recovered live cells were labeled by using a  $\gamma\delta$  T cell specific mAb (clone GL3) (dark black line) or an isotype control mAb (gray, shaded) and analyzed by flow cytometry.  $\gamma\delta$  T cells represented 2.3% of total cells isolated from mouse epidermis. Data are representative from 2 experiments with at least 3 mice per experiment.

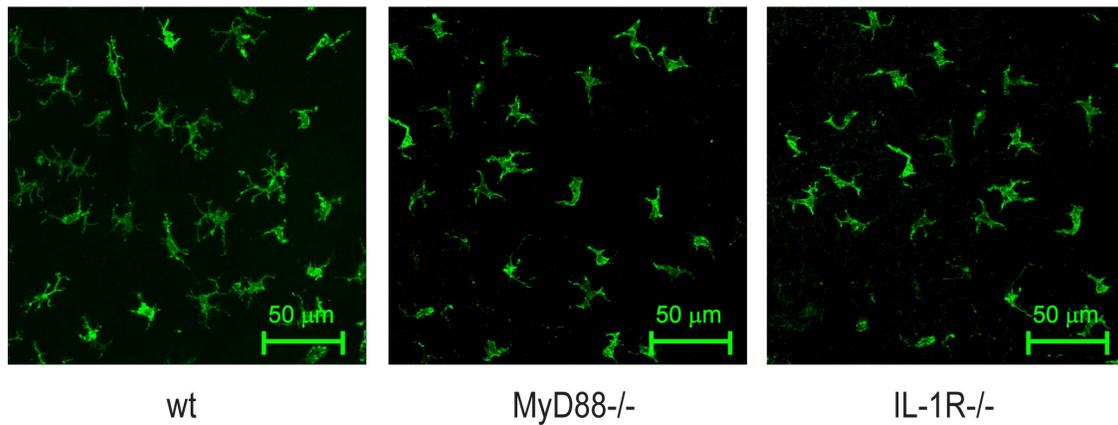


**Supplemental Figure 3.** Expression of V $\gamma$ 5 TCR on  $\gamma\delta$  T cells after *S. aureus* cutaneous infection. Epidermal cell suspensions were harvested from wt mice at 0 h (uninfected skin) (top panel) and 16 h after *S. aureus* cutaneous inoculation (middle panel) and V $\gamma$ 5 expression on epidermal  $\gamma\delta$  T cells (gated on GL3<sup>+</sup> cells) was determined by using a V $\gamma$ 5-specific mAb or isotype control antibody (gray, shaded) and analyzed by flow cytometry. There was no difference in the V $\gamma$ 5 expression at 0 and 16 h after infection as demonstrated in the bottom panel, which is an overlay of the expression of V $\gamma$ 5 at 0 h (red, shaded) and 16 h (dark black line) after cutaneous infection with *S. aureus*. Data are representative of mouse epidermal specimens from 6 wt mice pooled together at each time point.

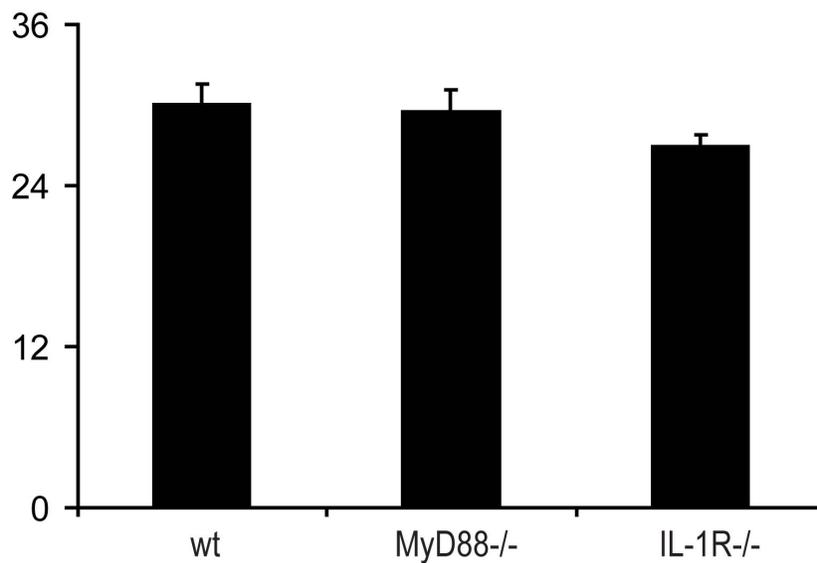


**Supplemental Figure 4.** Purified CD3<sup>+</sup> epidermal T cells ( $5 \times 10^5$  cells/ml) from normal skin of wt and  $\gamma\delta$  T cell-deficient mice were activated with PMA/ionomycin  $\pm$  IL-1 $\beta$ /IL-23 (20 ng/ml of each). Supernatants were collected after 24 h for analysis of IL-17 protein (pg/ml) by ELISA (n=5/group). CD3<sup>+</sup> T cells isolated from  $\gamma\delta$  T cell-deficient mice produced substantially less IL-17 when compared with the CD3<sup>+</sup> T cells isolated from wt mice, which are comprised of mostly (~90%)  $\gamma\delta$  T cells (Figure 4B). This finding further demonstrates that the major population of cells responsible for IL-17 production after *S. aureus* infection is epidermal  $\gamma\delta$  T cells and not other compensatory T cells that present in the skin of  $\gamma\delta$  T cell-deficient mice.

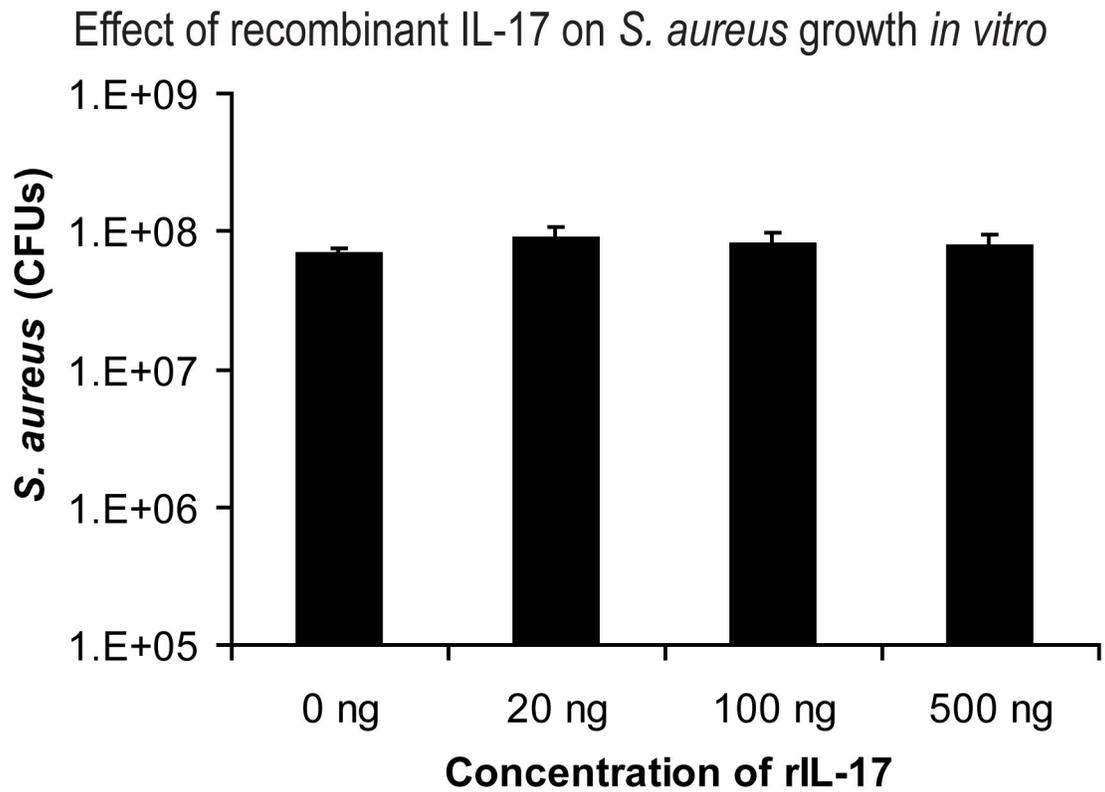
### A $V\gamma 5$ positive cells in epidermal sheets



### B Number of $V\gamma 5$ positive cells per high power field



**Supplemental Figure 5.** Numbers of  $V\gamma 5$  positive dendritic epidermal  $\gamma\delta$  T cells in the epidermis of wt, MyD88<sup>-/-</sup> and IL-1R<sup>-/-</sup> mice. (A) Representative confocal microscopy images of epidermal sheets from wt, MyD88<sup>-/-</sup> and IL-1R<sup>-/-</sup> mice that were labeled with an anti- $V\gamma 5$  mAb followed by an AlexaFluor488®-conjugated secondary antibody (630x magnification). (B) Mean numbers of  $V\gamma 5$  cells per high power field  $\pm$  SEM. Data represent the counts of  $V\gamma 5^+$  cells in 5 high power fields per specimen from 5 mice per group. There was no statistical difference in the number of  $V\gamma 5$  positive dendritic epidermal  $\gamma\delta$  T cells in the epidermis of wt, MyD88<sup>-/-</sup> and IL-1R<sup>-/-</sup> mice.



**Supplemental Figure 6.** To evaluate any potential bactericidal or bacteriostatic activity of IL-17 on *S. aureus*, we cultured *S. aureus* in shaking RPMI + 10% FCS for 5 h at 37°C in the presence increasing concentrations of recombinant murine IL-17 (rIL-17) (20, 100 and 500 ng) and numbers of *S. aureus* CFUs were determined after overnight culture on plates. We found that rIL-17 had no bactericidal or bacteriostatic activity against *S. aureus*.