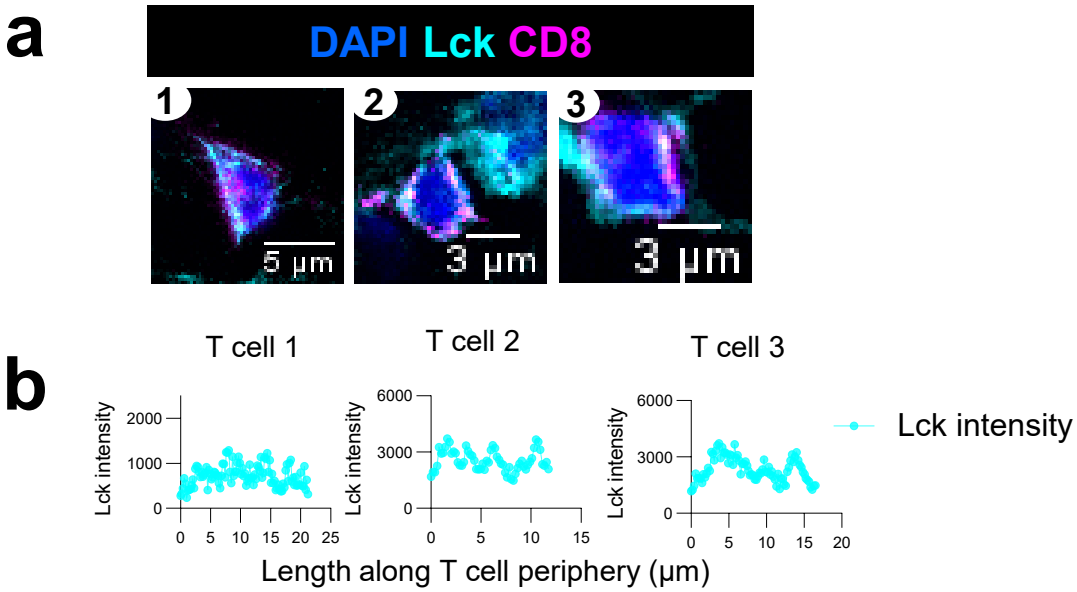
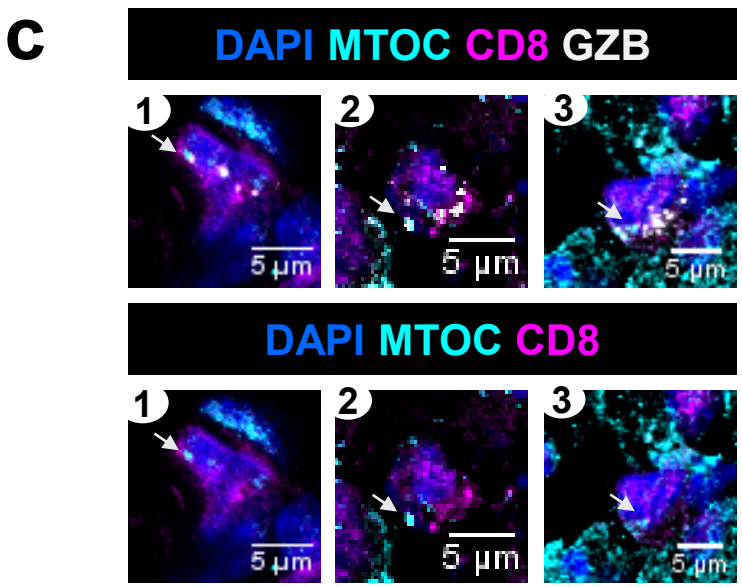
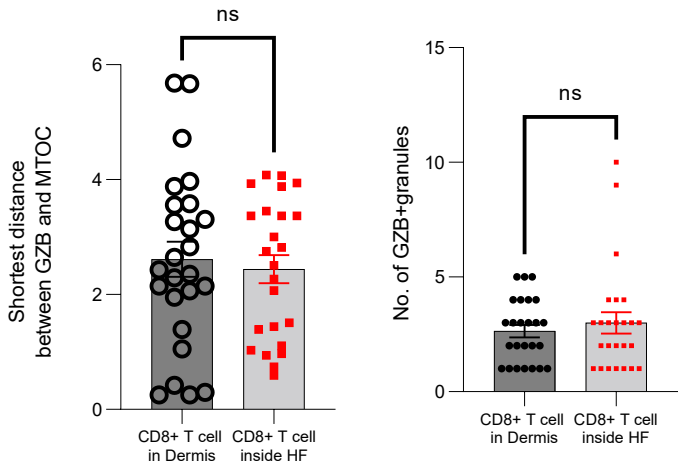
Supplementary figure 1.







Supplementary Figure 1. CD8+ T cells located in the dermis have converged granules at the MTOC but do not polarize Lck signaling kinase.

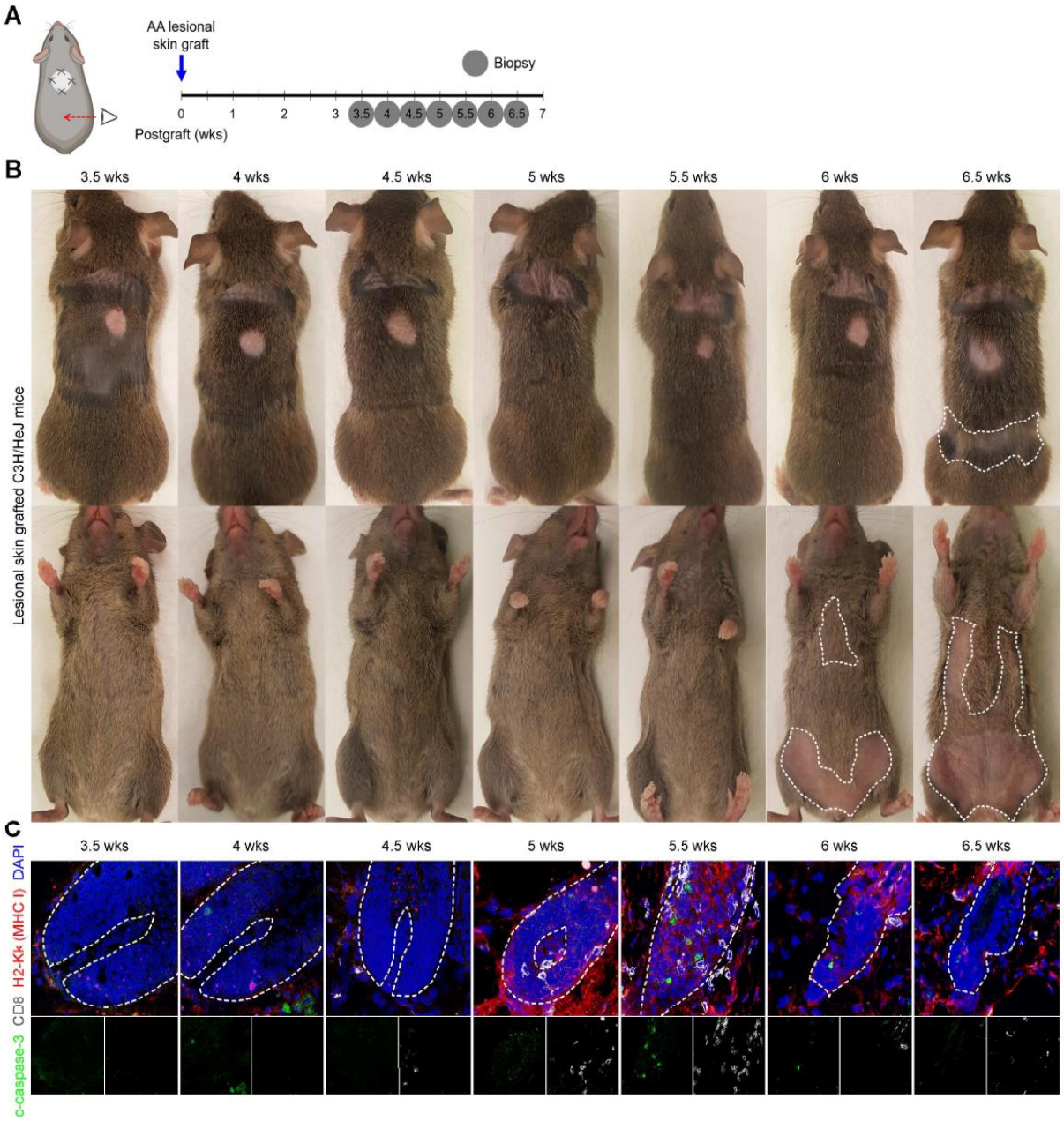
a, Three representative CD8+ T cells (magenta) located in the dermis are magnified in panel 1, 2, and 3 to demonstrate the uniform distribution of Lck (cyan) along the boundary of T cell. Nuclei were stained with DAPI dye shown in blue.

b, Profile of Lck staining intensity along the boundary of T cells drawn based on CD8 staining shows uniform expression of Lck along the dermal T cell surface.

c, Three representative CD8+ T cells (magenta) located in the dermis are magnified in panel 1, 2, and 3 to demonstrate the distribution of granzymes (grey) relative to MTOC (cyan). Nuclei were stained with DAPI dye shown in blue.

d, Graph shows the length of the shortest distance of GZB+ granules to MTOC and no. of GZB+ granules per T cells measured in CD8+ T cells located within dermis or HF. N=25 CD8+ T cells were analyzed in skin collected from 3 AA mice and unpaired two-tailed t test was performed. $P<0.05$ were considered statistically significant.

Supplementary figure 2.



Supplementary Figure 2. CD8+ T cell infiltration was coincided with upregulation of MHC class I molecules

a, Experimental scheme of the lesional skin graft induced AA model in C3H/HeJ mice.

b, Gross photographs showing that typical hair loss was observed around postgraft 6 weeks in AA-affected C3H/HeJ mice.

c, Immunofluorescence showing that perifollicular CD8+ T cell infiltration was detected with cleaved (c-) caspase-3+ apoptotic epithelial cells as early as postgraft 5 weeks, which coincided with upregulation of MHC class I molecules.