

In Vivo Analysis of Antigen-Presentation to CD4+ T Cells

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We studied naïve CD4+ T cells that migrate into skin-draining lymph nodes at late times after subcutaneous injection of antigen, and the role that they play in the immune response. By preventing new cells from entering lymph nodes using anti-CD62L antibody, we found that naïve late-arriving antigen-specific CD4+ T cells accounted for at least half of cells that proliferated during the primary response. Surprisingly, these late-arriving T cells experienced very little competition from the resident antigen-specific T cells that proliferated earlier in the response, even though the number of dendritic cells displaying peptide-MHC II complexes had fallen by the time of their arrival. Although late-arriving T cells proliferated less extensively in the primary response than the resident T cells, they proliferated more extensively during the secondary response. Therefore, late arrival into lymph nodes and exposure to a lower density of peptide-MHC II complexes ensures that some antigen-specific CD4+ T cells divide less in the primary response, and become less-differentiated memory cells capable of extensive division in the secondary response.

Relevant References

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