Adoptive Transfer of Tc17 CD8 T Cells as an Approach to Elicit a Better Immune Response to Vaccination

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CD8 T cells that produce IL-17 is an unknown field with lots to explore. In our previous studies, we found a novel subset of IL-17 producing CD8 T cells persisted longer in a self-antigen autoimmune model versus conventional IFN-g producing Tc1 cells; furthermore, Tc17 can convert to an IFN-g producing phenotype in vivo. In the present study, we adoptively transferred a relatively small numbers (100,000) of IL-17 secreting TCR-transgenic antigen-specific CD8 T cells one day before vaccination with recombinant vaccinia virus encoded with full-length hemagglutinin. Tc 17 cells activated, expanded better than Tc1 cells 9 days after vaccination (Mean = 7.425×10^6 versus 1.350×10^6, $p<0.05$). Interestingly, Tc17 can convert to an IFN-g producing phenotype after vaccination. Our preliminary data fit the niche that is required to improve vaccination and immunotherapy and we suggest that, to treat infectious disease, CD8 Tc17 could be a promising effector T cell subset to achieve the goal. Additional mechanisms are being explored.

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