DIFFERENTIAL RETENTION OF LYMPH-BORN CD8 MEMORY T CELLS SUBSETS WITHIN THE SUBCAPSULAR SINUS OF RESTING AND INFLAMED LYMPH NODES

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Aim: Both in mice and humans, some naïve T cells display phenotypic and functional features of memory T cells in the absence exposure to foreign antigen. Such naturally occurring memory-like T cells, also known as "virtual" memory T cells, are generated under steady-state conditions via homeostatic proliferative mechanisms. Here, we investigated the intranodal migration of afferent lymph-derived virtual memory CD8 T cell into steady-state and inflamed lymph nodes (LNs).

Materials and methods: Two subsets of virtual memory CD8 T cells were sorted into central memory (Tcm) and effector memory (Tem) cells. CD8 Tcm and CD8 Tem were stained with fluorescent dyes and then injected at 1:1 ratio with intralymphatic injection into lymphatic vessels draining towards the popliteal LNs of C57BL/6 mice that 72 hours earlier either received mouse cytomegalovirus (MCMV) in PBS or PBS. The positioning of injected cells in the popliteal LN was determined with fluorescent immunohistochemistry. The quantification analysis of cell distribution into different lymph-node compartments was performed in Imaris (Bitplane) and Graphpad Prism 7.0.

Results: In steady-state LNs, CD8 Tcm populated the LN paracortex, whereas CD8 Tem cells were preferentially localized within the medullary sinus system. However, both CD8 Tcm and CD8 Tem were retained within the subcapsular sinus (SCS) when LNs were inflamed due to a MCMV infection.

Conclusion: Our data indicate differences of intranodal migration of lymph-derived virtual memory CD8 T cells once they arrive at the SCS of steady-state and inflamed LNs.