Abstract

This work sums up current knowledge of so-called homeostatic proliferation-induced memory $CD8^+$ T cells (HP) and virtual memory $CD8^+$ T cells. These populations do not represent true immunological memory because they are generated in the absence of a cognate foreign antigen. However, both HP-memory and virtual memory T cells share some phenotypical and functional features with true memory T cells, including the ability provide rapid immune response during infection. HP-memory T cells are generated via homeostatic proliferation during experimentally induced lymphopenia. Virtual memory T cells might arise via homeostatic proliferation during neonatal or age-related periods of lymphopenia, however, they can be generated also in healthy lymphoreplete hosts. Based on detail analysis of these two populations, I concluded that HP-memory $CD8^+$ T cells and virtual memory $CD8^+$ T cells most likely use identical differentiation program and represent the same T cell population.

Keywords: homeostatic proliferation, lymphopenia, $CD8^+$ T cells, immunological memory, virtual memory cells