Hematology-2013
OMICS Group Conferences
Accelerating Scientific Discovery
International Conference on
Hematology & Blood Disorders
September 23-25, 2013 Raleigh, USA

Maturation, migration, and homeostasis of murine $CD4^+$ pre-thymic emigrants

Qing Ge
Peking University Health Science Center, China

Abstract

After a tightly regulated developmental program in the thymus, "mature" single positive (SP) thymocytes leave the thymus and enter the periphery. These newly arrived recent thymic emigrants (RTEs) are phenotypically and functionally immature, and will complete a dynamic maturation in the peripheral lymphoid organs before being licensed to be resident naïve T cells. To study the early events occurring in the RTE maturation process, we identified the phenotype of $CD4^+$ pre-RTEs, a population of $CD4^+$ SP thymocytes that have acquired the thymus egress capability. Compared to peripheral naïve T cells, $CD4^+$ pre-RTEs displayed superior survival capability in lymphoreplete mice and faster proliferation under lymphopenic condition. The differences in Bcl2/Bim expression and/or heightened IL-7 signaling pathway may account for the pre-RTEs' better responsiveness to homeostatic signals. Qa2, the expression of which indicates the phenotypic maturation of SPs and RTEs, was found to be upregulated in $CD4^+$ pre-RTEs in thymic perivascular space. Migratory dendritic cells surround this region contribute to Qa2 expression in pre-RTEs. The dendritic cell-driven Qa2 induction of $CD4^+$ pre-RTEs is independent of MHC class II and Aire molecules.

Biography

Dr. Qing Ge got her M.D. and Ph.D. at Peking University Health Science Center and finished postdoctoral training at the Center for Cancer Research, Massachusetts Institute of Technology. Dr. Ge is now a professor in the Department of Immunology, Peking University Health Science Center. She has published more than 40 papers in reputed journals and is serving as an editorial board member of Antivirus Research. She has done research on T cell homeostasis and differentiation, small interference RNA against infectious viruses. Currently Prof. Ge's research focuses on the maturation and migration of pre-RTEs and RTEs, the role of extracellular proteins on the development and differentiation of immune cells, and the tumorigenesis of hematopoietic system.