EuroSciCon

May 10-11, 2018
Frankfurt, Germany

JOINT EVENT
22nd Edition of International Conference on
Immunology and Evolution of Infectious Diseases
&
12th Edition of International Conference on
Tissue Engineering and Regenerative Medicine

Desheng Hu, J Transm Dis Immun 2018, Volume 2
DOI: 10.21767/2573-0320-C2-005

ARTERY TERTIARY LYMPHOID ORGANS: POWERHOUSES OF ATHEROSCLEROSIS IMMUNITY

Desheng Hu
Wuhan Union Hospital, China

Tertiary lymphoid organs (TLOs) emerge during non-resolving peripheral inflammation, but their impact on disease progression remains unknown. We have found in aged Apoe$^{-/-}$ mice that artery TLOs (ATLOs) controlled highly territorialized aorta T cell responses. ATLOs promoted T cell recruitment, primed CD4^{+} T cells, generated CD4^{+} , CD8^{+} , T regulatory (Treg) effector and central memory cells, converted naive CD4^{+} T cells into induced Treg cells, and presented antigen by an unusual set of dendritic cells and B cells. Meanwhile, vascular smooth muscle cell lymphotoxin β receptors (VSMC-LTβRs) protected against atherosclerosis by maintaining structure, cellularity, and size of ATLOs though VSMC-LTβRs did not affect secondary lymphoid organs. Atherosclerosis was markedly exacerbated in Apoe$^{-/-}$ Ltbr$^{-/-}$ and to a similar extent in aged Apoe$^{-/-}$Ltbr$^{fl/fl}$, Tagln-cre mice. These data support the conclusion that the immune system employs ATLOs to organize aorta T cell homeostasis during aging and that VSMC-LTβRs participate in atherosclerosis protection via ATLOs.

Biography

Desheng Hu has received his PhD degree in Immunology at the Leibniz Institute for Ageing Research, Jena University, Germany in 2012. After that he did his Postdoc training in the Institute for Immunology of Helmholtz Zentrum Munich and in the Institute for Immunology of Ludwig Maximilian University of Munich. In 2017, he went back to China and established his own research group in Wuhan Union Hospital, Wuhan, China. His research focuses on Vascular Immunology. So far, he has published several papers in high impact factor journals, such as *Nature Immunology, Immunity and Circulation Research*.

desheng_hu@126.com