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Role of autophagy in T regulatory cells (Tregs)-polarization during atherosclerosis disease

S. Mandatori[1], D. Starace[1], S. Piconese[2], I. Pacella[2], M. Caprio[3,4], A. Armani[3], V. Marzolla[3], C. Mammi[3], F. Padula[1], E. Ziparo[1], F. Cecconi[5,6,7] and A. Filippini[1]

[1] Department of Anatomy, Histology, Forensic Medicine and Orthopaedics, Sapienza University of Rome
[2] Department of Internal Medicine and Medical Specialties, Sapienza University of Rome
[3] Laboratory of Cardiovascular Endocrinology, IRCCS San Raffaele Pisana, Rome, Italy.
[4] Department of Human Sciences and Promotion of the Quality of Life, San Raffaele Roma Open University, Rome, Italy
[5] Department of Biology, University of Rome Tor Vergata, Rome, Italy.
[6] Department of PaediatricHaematology and Oncology, IRCCS Bambino Gesù Children's Hospital, Rome, Italy.
[7] Unit of Cell Stress and Survival, Danish Cancer Society Research Center, Copenhagen, Denmark.

Atherosclerosis is a chronic inflammatory disorder of the large arteries and represents the primary cause of heart disease and stroke. The exact cause of atherosclerosis is not known. A variety of studies show that autophagy deficiency may be pro-atherogenic and the role of autophagy in smooth muscle cells, macrophages and endothelial cells has been investigated [1]. However, to date no studies addressed the effect of autophagy on leukocyte subsets playing a role in plaque formation and development. The presentproject aims to better clarify the role played by autophagy in lymphocyte homeostasis in human atherosclerotic plaques and in APOE-KO, a mouse model of atherogenesis [2]. In particular, we will investigate cell-autonomous autophagy in mouse Tconv/Tregfunctions, evaluate autophagy-driven T cell polarization in stabilizing atherosclerotic plaques in a mouse model mouse of atherosclerosis. The comprehension of the role of autophagy as a further mechanism underlying Treg induction and stability may open new therapeutic avenues for atherosclerosis.

References

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Key words
Tregs, autophagy, atherosclerosis, ApoEKO.