Chandra Somasundaram, J Cell Sci Ther 2012, 3:8
http://dx.doi.org/10.4172/2157-7013.S1.019

OMICS Group Conferences
Accelerating Scientific Discovery

2nd World Congress on
Cell Science & Stem Cell Research

November 12-14, 2012 Hilton San Antonio Airport, USA

Perivascular adventitial cells in regenerative medicine

Chandra Somasundaram
University of Houston-Victoria, USA

Vascular growth and remodeling occur in association with certain physiological and pathological conditions. In addition, vascular regeneration and repair are essential for the survival of blood vessels. These processes involve numerous cell types. We have shown that a population of adventitial neuronal somata (ANNIES) expressing the neural cell adhesion molecule (NCAM) and the vasodilator neuropeptide, calcitonin gene-related peptide (CGRP), possibly of sensory nerve origin, is located in small mesenteric arteries. The vascular adventitia is a complicated tissue, which is found to be the most active layer in terms of cell turnover. Recent research reports suggest that stem or progenitor cells reside in the vessel wall, and specifically shown in "vasculogenic zone" within the vascular adventitia. Further, endothelial progenitor cells (EPCs) and hematopoietic stem cells (HSCs) were shown to co-exist within the vascular adventitia. This study suggests a symbiotic association of HSCs and EPCs in the vascular wall as in adult bone marrow. Here, we examined whether the adventitia of the adult rat mesenteric artery expresses HSCs, and mesenchymal stem/progenitor cells, and identified CD45+ and ckit+ cells using fluorescent confocal microscopy.

The mesenteric arterial adventitia harboring CD45+ hematopoietic stem cells, ckit+ mesenchymal stem/progenitor cells and CGRP-containing neural cells may participate in vascular and peripheral nerve injury and regeneration

Biography

Chandra Somasundaram has completed her Ph.D in biochemistry from Madurai Kamaraj University, and postdoctoral studies in cell and molecular biology from INSERM, Paris and University College of London. Further, Dr. Somasundaram continued her research at University of Washington, Seattle and Duke University Medical Center. At present, she is a scientist at Texas Nerve & Paralysis institute, and an adjunct faculty in the department of biology, University of Houston-Victoria. She has published extensively in reputed journals, and lectured at several national/international conferences. She has received the Young Scientist Research Award from the Department of Science and Technology, India, and research awards from British Heart Foundation, and The Wellcome Trust Foundation

csomasun@gmail.com