OMICS Group Conferences
Accelerating Scientific Discovery

International Conference on
Regenerative & Functional Medicine

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

# Multipotent perivascular mesenchymal stem cells in the human brain

**Ilknur Ozen**
Lund University, Sweden

Key questions in adult stem cell biology revolve around origin, tissue home and physiological role of adult stem cell populations. Mesenchymal stem cells (MSC) have remained elusive with regard to their in vivo physiology. Recent observations suggest that almost all adult tissues contain mesenchymal-like progenitors in a perivascular niche. Those cells can differentiate into mesodermal cell types and may even be endowed with tissue specific differentiation capacities. We have isolated and characterized a previously unrecognized progenitor cell population in the adult human brain. This cell population exhibits characteristics of mesenchymal stem cells (CD105, CD90, CD73, CD29) but in its native state does not express hematopoetic (CD34, CD45), endothelial (CD31), microglial (CD14, CD11b), glial and neuronal progenitor markers (GFAP, O4). We demonstrate at a clonal level, that the progenitors have true multilineage potential not only towards a mesodermal but also neuroectodermal phenotype and can differentiate into neurons. Thus, the vasculature in the adult human brain contains progenitor cells with multilineage capacity that may represent a reservoir that can be exploited in attempts to repair the damaged or diseased brain.

## Biography

Ilknur Ozen obtained her PhD at the University of Cambridge, at Brain Repair Centre where she worked on adult brain stem cells and brain plasticity. In 2008, she moved to Sweden to work as a postdoctoral scientist with Prof. Patrik Brundin at the Wallenberg Neuroscience Centre. She is currently working as a senior scientist at the Department of Clinical Science, at Lund University.

Ilknur.Ozen@med.lu.se