ADIPOSE-DERIVED PERIVASCULAR STEM CELLS AS A SOURCE FOR CELL THERAPY

V. Ogay [1,2]

[1] *National Laboratory Astana, Nazarbayev University (Astana, Kazakhstan)*
[2] *Stem Cell Laboratory, National Center for Biotechnology (Astana, Kazakhstan)*
vvacheslav.oaaviSnu.edu.kz

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Perivascular stem cells (PSCs) have been isolated from several organs and tissues, including adipose tissue. They have unique features resembling both pericytes and mesenchymal stem cells (MSCs). PSCs as MSCs are capable to multilineage differentiation into neurons, astrocytes and oligodendrocytes, as well as to produce angiogenic and neurotrophic factors, indicating their regenerative and neuroprotective properties. It was recently shown that PSCs play an important role in repairing of the nervous tissue during cerebral ischemia, as they can differentiate into neurons, endothelial and glial cells in the hippocampal subgranular zone. In this connection, recently PSCs have been considered as a potential alternative to MSCs for the treatment of cardiovascular diseases. Here we review the recent literature and own data on PSCs, discuss their unique features, regenerative potential and possible applications in cell therapy and tissue engineering.