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### Human gingival mucosa as a new source for myoblast derivation

**M**ultipotent mesenchymal stromal cells (MMSC) derived from various intraoral sources attracts attention of an increasing number of researchers due to availability and some features making them different from MMSC of bone marrow or adipose tissue. It is well known that MMSC derived from buccal mucosa, periodontal ligament, dental pulp, apical papilla and jaw periosteum can differentiate in myogenic direction. Such feature was not described for gingival mucosa derived MMSC (gMMSC) before now. The study conducted by us has demonstrated the possibility of isolation of gMMSC possessing the high proliferative potential and the ability to differentiate efficiently in canonical (adipo-, chondro-, osteogenic) directions. Moreover, we observed for the first time gMMSC induced differentiation in myogenic direction both at early and late passages. Further experiments showed that anatomical peculiarities play important role. Only gMMSC derived from alveolar but not attached part of gingiva are able to differentiate in myogenic direction. Similar features were observed for rabbit gMMSC, but not rodent gMMSC. Identified subpopulation of cells was fully characterized by us using immunocytochemical staining, ELISA, microarray. Comparative analysis of gMMSC and MMSC obtained from another sources testified the advantages of using these cells. Our results indicate that subpopulation of gMMSC derived from alveolar part of gingiva are perspective candidates for clinical usage in patients with skeletal muscle disorders. Preclinical experiments on a model of local muscle injury are ongoing.

### Biography

Vadim L Zorin is Head of the Department of Regenerative Medicine at the PJSC Human Stem Cells Institute (Moscow, Russia). He is the CEO of Vitacel LLC (Moscow, Russia) and is Skolkovo Innovation Center resident. He is developer of the only stem cell technology registered in Russian Federation – SPRS therapy (Service for Personal Regeneration of Skin) – a complex of personified therapeutic and diagnostic procedures to repair the skin with signs of age-related and scar changes. His current work focuses on musculoskeletal regeneration and induction of myogenic differentiation. He has published more than 60 papers in reputed journals in field of regenerative and personalized medicine.

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