



Stem Cells International

Special Issue on
Biomedical Applications of Dental and Oral-Derived Stem Cells

CALL FOR PAPERS

Over the past decade, a diverse array of adult stem cells has been identified within the oral cavity. These include dental pulp stem cells (DPSCs), dental follicle stem cells (DFSCs), stem cells from apical papilla (SCAP), stem cells from human exfoliated deciduous teeth (SHED), periodontal ligament stem cells (PDLSCs), and mesenchymal stem cells from the gingiva (GMSCs). A major advantage of these adult stem cells is their ease of isolation from readily available biological waste routinely produced during dental treatment, that is, extraction of impacted third molars (i.e., wisdom tooth) and deciduous tooth (i.e., primary tooth).

While the overwhelming majority of previous studies have demonstrated that these adult stem cells certainly have useful applications in various dental treatments (i.e., periodontal and maxillofacial regeneration, osseous integration of titanium implants, and dental pulp regeneration after endodontic treatment), a number of studies have emerged which suggest that such stem cells also have much potential for diverse nondental medical applications. It was positively demonstrated in various animal models that dental and oral-derived stem cells could be utilized for bone, cartilage, and tendon regeneration, repair of spinal cord injury and peripheral nerve regeneration, enhancement of angiogenesis and healing of skin wounds, and even aiding in recovery of heart function after acute myocardial infarction. Similar to BM-MSCs, dental and oral-derived adult stem cells have also been shown to possess immunomodulatory properties that can be exploited for cell-based therapy of immune and inflammation-related diseases.

We hereby invite researchers in both the dental and medical fields to contribute original research articles as well as review articles that will deepen our understanding of the biological characteristics and functionality of dental and oral-derived stem cells, together with their applications in cell-based therapy.

Potential topics include, but are not limited to:

- ▶ Basic research on the transcriptome, secretome, and proteomic profile of dental and oral-derived adult stem cells
- ▶ The utilization of these adult stem cells for cell-based therapy in both dentistry and medicine
- ▶ Novel biomaterial scaffolds for these adult stem cells
- ▶ The immune-modulatory properties of these adult stem cells, and their application in cell-based therapy of immune and inflammation-related diseases
- ▶ Nontherapeutic applications of these adult stem cells in toxicology, pharmacology, and in vitro disease modeling

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/sci/dods/>.

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Manuscript Due

Friday, 29 January 2016

First Round of Reviews

Friday, 22 April 2016

Publication Date

Friday, 17 June 2016