

Special Issue on
**Oral-Derived Stem Cells: An Innovative Platform for
Regenerative Medicine**

CALL FOR PAPERS

Oral-derived stem cells possess an exceptional regenerative potential that could be explored in various cell-based regenerative approaches, thus constituting a hot research topic in both fundamental and applied sciences.

The oral cavity offers a plethora of alternative stem cell sources at easily accessible sites, which facilitates stem cell collection and cultivation and their final use for research purposes without serious ethical concerns. Dental and gingival human tissues are few of the oral-derived stem cell sources that allowed the isolation of a variety of mesenchymal stem cell populations (MSCs) such as stem cells from the exfoliated deciduous teeth (SHED), periodontal ligament (PDLSC), dental follicle (DFPC), apical papilla (SCAP), and gingiva (GMSC).

In vitro, the multipotentiality of oral-derived MSCs is shown by their differentiation ability into a variety of specific cell populations such as odontoblast, osteoblasts, neural cells, chondrocytes, adipocytes, myoblasts, fibroblasts, and endothelial cells. Oral-derived MSCs are easily cryopreservable and have a strong immunomodulatory capacity. These properties make the oral-derived MSCs excellent candidates for the treatment of various pathologies, degenerative and traumatic disorders including skeletal and maxillofacial degeneration or trauma, ischemic injuries, and neurodegenerative and immune disorders. Furthermore, these cells could be extensively used for pharmacological research purposes, not only in craniofacial but also in systemic and genetic diseases.

Preclinical studies mainly rely on animal models that are not representative of the regenerative potential and conditions in humans and therefore these studies have a poor translational validity. This leads to the necessity for disease models that better imitate the *in vivo* phenotype and relate closely to the human physiology.

Then, to evaluate the aptitude of oral-derived stem cells in terms of tissue regeneration we invite authors to contribute with original research articles and reviews focused on the use of oral-derived stem cells for future clinical applications. *In vivo* and *ex vivo* studies must be focused on the characterization of stem cells-based 3D substitutes, in particular on stem cell performance and cell/scaffold behavior. *In vivo* studies should concentrate on possible therapeutic roles of stem cells and their secretome in tissue regenerative therapies via their differentiation properties and their paracrine effects.

Further, findings on the evaluation of oral stem cells as experimental tools against human disorders, the understanding of the molecular machinery underlying diseases, and the development of new therapeutic designs for individualized treatments will be endorsed.

Potential topics include but are not limited to the following:

- ▶ Ecto-meso-endo-dermal differentiation of oral stem cells
- ▶ 3D systems living construct: scaffold/stem cells
- ▶ *In vitro* and *in vivo* oral stem cell-based and their secretome-based therapy
- ▶ Oral stem cell models of systemic and genetic diseases
- ▶ Oral Stem cell-derived models for drug personalized therapy

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

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor

Oriana Trubiani, University of G. d'Annunzio Chieti and Pescara, Chieti, Italy
trubiani@unich.it

Guest Editors

Emanuela Mazzon, IRCCS Centro Neurolesi "Bonino Pulejo", Messina, Italy
emazzon.irccs@gmail.com

Thimios Mitsiadis, Universitat Zurich, Zürich, Switzerland
thimios.mitsiadis@zsm.uzh.ch

Barbara Zavan, Università degli Studi di Padova, Padova, Italy
barbara.zavan@unipd.it

Submission Deadline

Friday, 8 September 2017

Publication Date

January 2018