

Tentative Outline

Special Thematic Issue for the journal (Current Stem Cell Research & Therapy)

Title of the Thematic Issue: Stem Cells from Human Exfoliated Deciduous Teeth: Waste to Wealth

Guest Editors: Nazmul Haque, PhD

Scope of the Thematic Issue:

Stem cells from human exfoliated deciduous teeth (SHED) share the characteristics of mesenchymal stem cells (MSCs). They have remarkable potential to differentiate into different types of cell lineages such as cardiomyocytes, beta cells, hepatocytes, neuronal cells etc. Cell based regenerative therapy requires 300-500 million stem cells. In order to yield enough cells for transplantation it may require 4-5 weeks. Media supplements, culture environments and culture practices play vital role in maintaining the regenerative potential of SHED. Moreover, SHED have inherent lineage-specific differentiation propensity that could be advantageous in treating specific disorders. Like other MSCs, immunomodulatory properties of SHED make them universal donors. Hence, this special issue pertaining to successful regenerative therapy focuses on the regenerative potential of SHED while emphasizing on their inherent propensity and *in vitro* culture environment.

Keywords: culture conditions; differentiation; lineage-specificity; mesenchymal stem cells; regenerative therapy; stem cell banking.

Sub-topics:

The sub-topics to be covered within the issue are listed below:

- Regenerative potential of SHED
- Effective isolation, expansion and cryopreservation techniques of SHED
- Current status of *in vivo* studies and clinical trials using SHED
- Targeted lineage specific differentiation of SHED
- SHED in neuronal regeneration
- Inherent lineage specific differentiation propensity of SHED
- SHED in personalize endodontic therapy
- SHED banking

Tentative titles of the articles and list of contributors:

Tentative titles of the articles and list of contributors with their names, designations, addresses and email addresses are given below:

1. Regenerative potential of stem cells from human extracted deciduous teeth.
2. Comparison among different isolation, expansion and cryopreservation techniques to produce SHED with better regenerative potential.
3. Current status of *in vivo* studies and clinical trials using SHED.
4. Techniques for targeted lineage specific differentiation of SHED for tissue or organ specific regeneration.
5. Role of SHED in personalized endodontic therapy.
6. Potential of SHED to treat neuro-degenerative diseases.
7. Potential of SHED in osteogenic and chondrogenic regeneration.
8. Prospects of SHED banking.

Note: The contributors will not be limited to the list. Following final acceptance of the proposal, we will contact the prominent researchers affiliated to our partner universities to make the issue more impactful.

Schedule:

- ✧ Thematic issue submission deadline: 31 May 2020
- ✧ Peer Review Due: 30 June 2020
- ✧ Revision Due: 31 July 2020
- ✧ Announcement of acceptance by the Guest Editors: 31 August 2020
- ✧ Final manuscripts due: 15 September 2020

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