

## EDITORIAL

# Welcome to *Stem Cell Research & Therapy*

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Welcome to the first issue of the international open access journal *Stem Cell Research & Therapy*, edited by Professor Rocky Tuan, of the University of Pittsburgh, and Professor Timothy O'Brien, of the National University of Ireland, Galway.

*Stem Cell Research & Therapy* aims to be the major forum for translational research into stem cell therapies. The journal has a special emphasis on basic, translational, and clinical research into stem cell therapeutics, including animal models, and clinical trials.

Stem cell research for therapeutic purposes has largely used adult stem cell sources. Embryonic stem cell research has enormous potential and also has major hurdles to overcome, not the least of which are ethical in nature. Funding for research into embryonic stem cells has also been in a state of transition. The change in US policy and subsequent National Institutes of Health guidelines allowing funding for human embryonic research has moved the use of stem cells of embryonic origin back into the spotlight [1]. Although legislation throughout the world varies, the international research community is striving to disseminate critical knowledge and useful ideas to aid the progress of our expertise in this area, and our open access policy will promote this.

### Why is stem cell research important?

Stem cell research has great potential in the treatment of as-of-yet incurable diseases, including Huntington disease and Parkinson disease, Alzheimer disease, and amyotrophic lateral sclerosis. Other, more chronic conditions such as congestive cardiac failure, diabetes, and osteoarthritis may also respond well to stem cell therapy.

With the knowledge that stem cells can be induced to differentiate into specialized cells and that they can influence the tissues around them, the potential of stem cells as a therapeutic option is great. Recent advances have demonstrated that adult somatic cells, called induced pluripotent stem cells, can be reprogrammed into becoming stem-like in their nature and behavior [2].

Research is currently focused on calibration of the process of cell reprogramming, ensuring the quality of induced pluripotent stem cells, and modification of the stem cell niche. Future research will increasingly consider quality control of stem cell manufacture, delivery to the target areas, and architectural aids to ensure optimum placement and exposure of the stem cells.

Another important aspect of stem cell therapeutics will be a focus on the bioengineering of materials necessary to deliver and support stem cells on their therapeutic journey. Combinations of stem cell therapy with gene therapy will also expand the therapeutic repertoire as the effectiveness of the stem cell product may be enhanced via genetic modification. Thus, combinations of stem cells, biomaterials, and gene therapy may augment the therapeutic outcome but will result in complex regulatory challenges.

The potential paracrine mode of the therapeutic action of stem cells is worthy of substantial attention. Understanding the mechanism whereby stem cells heal tissue by regulating and interacting with host cells may lead to the development of novel therapeutic paradigms that may not require the stem cell per se as the therapeutic agent.

### How and what will we publish?

BioMed Central is launching *Stem Cell Research & Therapy* to provide a new forum to highlight the growing area of stem cell therapeutics. In this open access journal, our research content will be made freely available upon publication. This means that readers worldwide will have immediate and free access to original research, promoting the immediate and wide distribution of the most current developments in the field [3]. Under our open access license, authors retain copyright of their article, allowing them, and any third party, to re-use their work as long as the authors are given correct attribution [4]. To cover the costs of open access, authors of original research are asked to pay an article-processing charge once their article has been accepted for publication. This is a flat fee that includes the use of color figures, unlimited pages, and additional data sets. Indeed, authors can upload both audio and visual files alongside their manuscript at no extra cost. To ensure permanence and high visibility, research published in *Stem Cell Research &*

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*Therapy* will also be deposited in several international bibliographic databases [5].

*Stem Cell Research & Therapy* will publish original research as well as regular commissioned articles. Our reviews will provide a comprehensive overview of specific topics, collating and discussing the ever-changing advances in the field. There will be a specific focus on the therapeutic elements of stem cell research. Commentaries and viewpoint articles will be speculative and allow authors to be more opinionated in their views. Readers are firmly encouraged to participate and can do so by submitting letters to the editor on articles published in *Stem Cell Research & Therapy* and on any issue in a related area. Brief comments can also be posted online on any article by using the tools displayed on the article's webpage. These tools will also allow articles to be shared via 'social media' services such as Facebook and Twitter, reflecting the commitment of the journal to disseminating our articles widely via the most popular and modern means.

### We welcome your contributions

*Stem Cell Research & Therapy* will provide a platform for translational research into stem cell therapy. We are delighted to introduce this much-needed journal to the stem cell research community, and we welcome your responses and submissions. The Editors-in-Chief, supported by a global Editorial Board [6], are committed to

making this journal a success, and we look forward to receiving your contributions.

### Competing interests

AD and SJ are employees of BioMed Central and receive fixed salaries. TO and RT are the Editors-in-Chief of *Stem Cell Research & Therapy* and receive an annual honorarium.

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