



## Engineering 3D Tissue Models: Techniques and Applications in Regenerative Medicine

Guest Editor:

**Dr. Agnes Klar**

Tissue Biology Research Unit,  
Department of Surgery,  
University Children's Hospital  
Zurich, 8032 Zurich, Switzerland

Deadline for manuscript  
submissions:

**31 July 2024**

### Message from the Guest Editor

Dear Colleagues,

Recently, 3D cell culture systems have been improved with new techniques and formulations that allow the culture of cell lines as well as organoids from primary tissues. In these conditions, tissue-engineered micro-tissues can orient themselves spatially, creating niches enriched in stem or differentiated cells specific to the tissue of origin. These tools allow precise and direct monitoring of physiological and pathological mechanisms and are often much more informative and versatile than in vivo tests. These innovative in vitro models can recapitulate the complexity of the tissue of origin, with different cellular components colonizing a matrix that reproduces the spatial conformation of the tissue vitro by mimicking the in vivo microenvironment without the use of animal models that are usually quite expensive. These tools can be essential for analyzing the physiological behavior of healthy cells and patient cells derived from several diseases such as cancers, metabolic diseases, neurodegenerative disorders, autoimmune diseases, and inherited pathologies allowing for a more accurate personalized medicine approach.





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Felipe Fregni

1. Neuromodulation Center and  
Center for Clinical Research

Learning, Spaulding  
Rehabilitation Hospital and  
Massachusetts General Hospital,  
Harvard Medical School, Boston,  
MA 02114, USA

2. Department of Epidemiology,  
Harvard T.H. Chan School of  
Public Health, Boston, MA 02115,  
USA

## Message from the Editor-in-Chief

*Biomedicines* (ISSN 2227-9059) is an open access journal devoted to all aspects of research on human health and disease, the discovery and characterization of new therapeutic targets, therapeutic strategies, and research of naturally driven biomedicines, pharmaceuticals, and biopharmaceutical products. Topics include pathogenesis mechanisms of diseases, translational medical research, biomaterial in biomedical research, natural bioactive molecules, biologics, vaccines, gene therapies, cell-based therapies, targeted specific antibodies, recombinant therapeutic proteins, nanobiotechnology driven products, targeted therapy, bioimaging, biosensors, biomarkers, and biosimilars. The journal is open for publication of studies conducted at the basic science and preclinical research levels. We invite you to consider submitting your work to *Biomedicines*, be it original research, review articles, or developing Special Issues of current key topics.

## Author Benefits

**Open Access:** free for readers, with [article processing charges \(APC\)](#) paid by authors or their institutions.

**High Visibility:** indexed within [Scopus](#), [SCIE \(Web of Science\)](#), [PubMed](#), [PMC](#), [CAPUS / SciFinder](#), and [other databases](#).

**Journal Rank:** JCR - Q1 (*Pharmacology & Pharmacy*) / CiteScore - Q2 (*Medicine (miscellaneous)*)

## Contact Us

*Biomedicines* Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/biomedicines](http://mdpi.com/journal/biomedicines)  
[biomedicines@mdpi.com](mailto:biomedicines@mdpi.com)  
[X@Biomed\\_MDPI](#)