

Special Issue on
**Tissue Microenvironment: Studying Materials and
Strategy for Regeneration**

CALL FOR PAPERS

Tissue engineering, which is directed to produce artificial tissues or organs for medical needs, can provide a permanent solution to the problem of shortage supply for transplantation. The major elements in engineered transplants are the cells, the building materials, bioactive factors, and physical and chemical signals represented in the surroundings. In recent years, there were significant advances in tissue engineering, yet a number of challenges remain in making practical and high throughput tissue-engineered transplants. These obstacles comprise the deficiency in a self-renewable depot for functional cells harboring immunological compatibility with the recipients and the deficiency in building materials that offers mechanical, physical, chemical, and biological stimuli in constructing the tissue environment. The understanding of the properties and interplays between the system components is the key for a successful off-the-shelf engineered transplant.

In order to have engineered transplants that precisely mimic the architectural complexity of native tissues, the key is to truly comprehend the specificity required in each tissue microenvironment. The maneuver through physical, chemical, and biological control is of utmost importance in creating biologically similar microenvironments. Specifically, surface topography and mechanical properties for building materials, controlled release of bioactive agents, differential extracellular matrix composition, and the interactions of these factors can be orchestrated spatially and temporally to accomplish a predictive manipulation over cellular behaviors.

The development of strategies that exploit the unique characteristics of tissue microenvironments acquires not only further in-depth study but also multidisciplinary collaboration. Therefore, this series will cover recent advances in tissue microenvironment research. We invite investigators in all fields to contribute high quality original research articles as well as review articles.

Potential topics include but are not limited to the following:

- ▶ Muscle microenvironment
- ▶ Liver microenvironment
- ▶ Bone microenvironment
- ▶ Skin microenvironment
- ▶ Nerve and neuron microenvironment
- ▶ Cancer and tumor microenvironment
- ▶ Microenvironment for drug discovery and transport studies
- ▶ Organ-on-a-chip systems

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/ijbm/tmsm/>.

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

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