Special Issue

Mechanisms of Differentiation of Mesenchymal Stem Cells of Different Origin

Message from the Guest Editors

MSCs are actively studied from the point of view of both fundamental problems of cell differentiation and their practical application in biomedicine. The universal definition of MSC appeared in 2006 and has not changed much since then. MSCs are plastic-adherent cells capable of proliferation in vitro, having a certain set of surface antigens and capable of osteogenic, adipogenic, and chondrogenic differentiation. Obviously, many types of MSC-like cells fit such criteria. According to single-cell transcriptome analysis, even primary cultures of MSCs from one compartment are heterogeneous. This variability is superimposed on differences in cells between compartments. MSC-like cells are isolated from almost any tissue of mesenchymal origin, including bone, adipose, and muscle tissues, as well as heart, lungs, liver, blood, urine, etc. A significant role is played by the niche in which MSC-like cells are located in vivo. All this leads to the differential ability of different types of MSCs to proliferate and differentiate.

This Special Issue is devoted to the comparison of the mechanisms of differentiation of various types of MSC-like cells.

Guest Editors

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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.

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