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## Mechanisms of Differentiation of Mesenchymal Stem Cells of Different Origin

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### 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.



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# Special Issue



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## Message from the Editor-in-Chief

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