Special Issue

Mesenchymal Stem Cells-Based Gene Therapy Approach Mediated by Non-viral Vectors

Message from the Guest Editor

The ability to culture expand Mesenchymal Stem Cells (MSCs) easily, differentiate them into different cell types in vitro, in addition to their appealing immunologic characteristics, clearly render MSCs a promising source of stem cells, for gene therapy. Genetic material transfection could be done for cells in vitro, in vivo and ex vivo. The development of a suitable delivery system to carry the correct gene to the affected target cells is an essential aspect of gene therapy. Safe and effective gene delivery for long-term remains a big challenge for gene therapy. Recent advances in nanotechnology, material sciences, and nucleic acid chemistry have provided promising non-viral delivery systems, which should increase the potential of MSCs based gene therapy. Non-viral delivery systems show quite a big number of challenges that needs to be circumvented in order to increase their gene transfer effectiveness, especially in MSCs.

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Message from the Editor-in-Chief

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