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Mesenchymal-Stem-Cell-Based Drug Delivery Strategies for Biomedical Applications

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Message from the Guest Editors

Among various drug-targeting approaches, cell-based delivery systems offer some unique strengths. The use of mesenchymal stem cells as a targeted-delivery carrier is promising due to their ease of isolation, expansion, maintenance of their phenotype, and multilineage potential in vitro. Currently, MSC-based delivery represents a promising approach for several clinical applications, ranging from tissue repair to the treatment of pathologies such as diabetes, cardiovascular disease, neurological disorders, and cancer.

However, this approach still has many limitations in clinical translation, such as induction of immunogenicity, high costs, or variable effects. Moreover, the long-term effect of priming MSCs has not been evaluated yet. Further studies are needed to assess the impact of different priming approaches in clinic; the best sources for MSCs isolation; and the epigenetic modifications, immunogenicity, and tumorigenicity of primed and non-primed MSCs.

This Special Issue aims to present a collection of high-quality original articles and extensive reviews on MSC-based drug delivery systems for various clinical applications.



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Special Issue



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