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Manuscript Type: REVIEW

Mesenchymal stem cell-derived exosomes: Toward cell-free therapeutic strategies in regenerative medicine

Ma ZJ *et al.* MSC-Exos

Zhan-Jun Ma, Jing-Jing Yang, Yu-Bao Lu, Zhao-Yang Liu, Xue-Xi Wang

Abstract

Mesenchymal stem cells (MSCs) are multipotent stem cells with marked potential for regenerative medicine because of their strong immunosuppressive and regenerative abilities. The therapeutic effects of MSCs are based in part on their secretion of biologically active factors in extracellular vesicles known as exosomes. Exosomes have a diameter of 30-100 nm and mediate intercellular communication and material exchange. MSC-derived exosomes (MSC-Exos) have potential for cell-free therapy for diseases of, for instance, the kidney, liver, heart, nervous system, and musculoskeletal system. Hence, MSC-Exos are an alternative to MSC-based therapy for regenerative medicine. We review MSC-Exos and their therapeutic potential for a variety of diseases and injuries.

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Exosomes are **lipid vesicles secreted** by **adipocytes**, or by **adipose mesenchymal stem cells**, with the aim to release **molecular mediators**, in particular in stress conditions [23], ...

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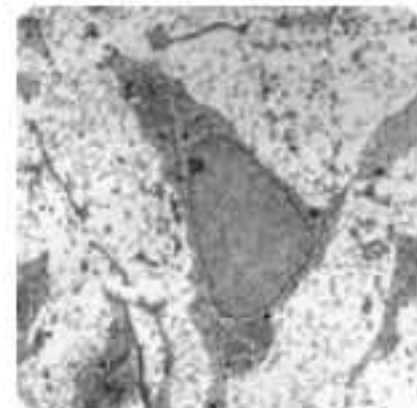
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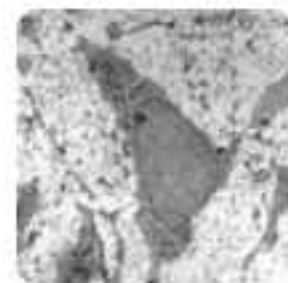
Mesenchymal stem cells (MSCs) also known as mesenchymal stromal cells or medicinal signaling cells are multipotent stromal cells that can differentiate into a variety of cell types, including osteoblasts (bone cells), chondrocytes (cartilage cells), myocytes (muscle cells) and adipocytes (fat cells which give rise to marrow adipose tissue).



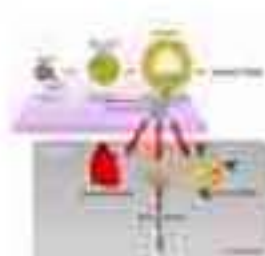
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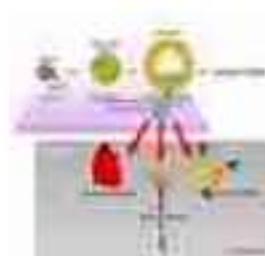
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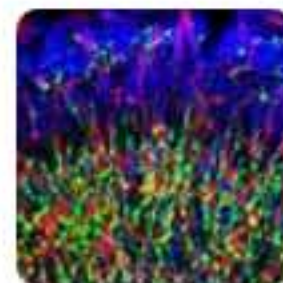
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