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**Multifunctional role of microRNA in mesenchymal stem cell-derived exosomes in the treatment of diseases**

Hui-Kang Xu, Li-Jun Chen, Si-Ning Zhou, Yi-Fei Li, Charlie Xiang

**Abstract**

Mesenchymal stem cells can be replaced by exosomes for the treatment of inflammatory diseases, injury repair, degenerative diseases, and tumors. Exosomes are small vesicles rich in a variety of nucleic acids [including messenger RNA, Long non-coding RNA, microRNA (miRNA), and circular RNA], proteins, and lipids. Exosomes can be secreted by most cells in the human body and are known to play a key role in the communication of information and material transport between cells.

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**Mesenchymal stem** cells (MSCs) have been reported to treat various degenerative **diseases** not through their differentiation potential but through their paracrine factors of the extracellular vesicle (EV) including **exosomes**.

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