Exosomes could offer the benefits of mesenchymal stem cell therapies without the drawbacks

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Video Byte

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Abstract

Mesenchymal stem cells (MSCs) are multifunctional cells with the ability to reduce inflammation and repair tissue when injected directly. But MSC use is controversial, especially in patients with cancer or in cancer remission, as MSCs can release growth factors that can promote tumor growth. Fortunately, new research is showing that certain MSC contents can exert targeted beneficial effects without these drawbacks, most notably, microRNAs packaged inside exosomes. These loaded exosomes can accumulate at sites of tissue damage, and many studies suggest that MSC exosomes can be applied to cancer therapy, gene therapy, drug delivery, regenerative medicine, and other biomedical applications. Further research could reveal new and more effective ways of packaging and transferring exosomes from MSCs to recipient cells, and thereby lead to new methods of treating and monitoring various diseases.