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Crossref 16 words

Xiaofei Cheng, Guoying Zhang, Liang Zhang, Ying Hu, Kai Zhang, Xiaojiang Sun, Changqing Zhao, Hua Li, Yan Michael Li,

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**Name of Journal:** *World Journal of Stem Cells*

**Manuscript NO:** 54910

**Manuscript Type:** REVIEW

**Exosomes derived from stem cells as an emerging strategy for intervertebral disc degeneration**

Hu ZL *et al.* Intervertebral disc degeneration

Zhi-Lei Hu, Hai-Yin Li, Xian Chang, Yue-Yang Li, Chen-Hao Liu, Xiao-Xin Gao, Yu Zhai, Yu-Xuan Chen, Chang-Qing Li

### Abstract

Intervertebral disc (IVD) degenerative diseases are a common problem in the world, and they cause substantial social and economic burdens for people. The current methods for treating IVD degenerative diseases mainly include surgery and conservative treatment, which cannot fundamentally restore the normal

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Schematic illustration of MSCs-derived exosomes for intervertebral disc degeneration treatment. (a) BMSCs derived from C57BL/6 mice were obtained. (b) Isolation of MSC-derived exosomes. (c) Exosomes were investigated in an IVD degeneration rabbit model. (d) Enhanced mitochondrial biogenesis by exosomes. (e) Possible signal pathway.

Cited by: 3

Author: Chen Xia, Zhongyou Zeng, Bin Fang, Min ...

Publish Year: 2019

## Exosomes Isolated From Adipose-Derived Stem Cells: A New ...

<https://journals.sagepub.com/doi/full/10.1177/0363546519876323>

Sep 27, 2019 · Exosomes as potential alternatives to stem cell therapy for intervertebral disc degeneration: in-vitro study on exosomes in interaction of nucleus pulposus cells and bone marrow mesenchymal stem cells. Stem Cell Res Ther.

Cited by: 1

Author: Chongyang Wang, Wei Song, Bi Chen, X...

Publish Year: 2019

## Exosomes as potential alternatives to stem cell therapy ...

<https://stemcellres.biomedcentral.com/track/pdf/10.1186/s13287-017-0563-9> ▾





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<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6907421>

Nov 19, 2019 · Exosomes from mesenchymal stem cells modulate **endoplasmic reticulum stress** to protect against nucleus pulposus cell death and ameliorate intervertebral disc degeneration in vivo. Theranostics. (2019) 9 :4084–100. 10.7150/thno.33638 [ PMC free article ] [ PubMed ] [ CrossRef ] [ Google Scholar ]

**Author:** Long Li, Rulin Wang, Yichen Jia, Rui... **Publish Year:** 2019

## Exosomes Help Regenerate Intervertebral Disc Tissue ...

<https://www.stemedix.com/exosomes-help-regenerate-intervertebral-disc-tissue...>

Nov 13, 2019 · The researchers found that **exosomes** could send out signals to bone marrow mesenchymal **cells** and call them to the **intervertebral disc**. The **exosomes** also prompted the **stem cells** to become new nucleus pulposus-like **cells**. Conversely, **exosomes** from bone marrow mesenchymal **cells** caused nucleus pulposus **cells** to grow and multiply (i.e. proliferate).

## Exosomes as potential alternatives to stem cell therapy ...

<https://www.ncbi.nlm.nih.gov/pubmed/28486958>

May 10, 2017 · BACKGROUND: The stem cell-based therapies for intervertebral disc degeneration have been widely studied. However, the mechanisms of mesenchymal stem cells interacting with intervertebral disc cells, such as **nucleus pulposus cells (NPCs)**, remain unknown. Exosomes as a vital paracrine mechanism in cell-cell communication have been highly focused on.

**Cited by:** 21 **Author:** Kang Lu, Hai-yin Li, Kuang Yang, Jun-lo...

**Publish Year:** 2017

## Mesenchymal stem cell-derived exosomes ameliorate ...

<https://www.sciencedirect.com/science/article/pii/S0891584919302278>

**Mesenchymal stem** cell-derived exosomes ameliorate intervertebral disc degeneration via anti-oxidant and anti-inflammatory effects





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Stem cell therapies for intervertebral disc degeneration have been demonstrated as a promising strategy. Previous studies have shown that **human nucleus pulposus cell- (NPC-)** derived exosomes can induce the differentiation of mesenchymal stem cells (MSCs) into NP-like cells in vitro.

**Author:** Wei-ren Lan, Sai Pan, Hai-yin Li, Chao Sun, Xian Chang, Kang Lu, Chang-qing Jiang, Rui Zuo, Yue Zhou...

**Cited by:** 3

**Publish Year:** 2019

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Nov 19, 2019 · Exosomes from mesenchymal stem cells modulate **endoplasmic reticulum stress** to protect against nucleus pulposus cell death and ameliorate intervertebral disc degeneration in vivo. Theranostics. (2019) 9 :4084–100. 10.7150/thno.33638 [ PMC free article ] [ PubMed ] [ CrossRef ] [ Google Scholar ]

**Author:** Long Li, Rulin Wang, Yichen Jia, Rui...

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