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LETTER

Response to Article "Regenerative Potential Nanomedicine of Adipocyte Stem Cell-Derived Exosomes in Senescent Skin Tissue" [Letter]

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Dear editor

We recently read with great interest the article "Regenerative Potential Nanomedicine of Adipocyte Stem Cell-Derived Exosomes in Senescent Skin Tissue" by Li[1] et al, published in your journal. This study presents that exosomes from human adipose-derived stem cells conditional medium (HADSCs-CM) could alleviate skin aging by reducing dermal thickness, increasing vascular endothelial growth factor (VEGF) expression, and improving collagen volume.

The research identified that the functional particles in HADSCs-CM were exosomes by using many measures such as Western blotting, transmission electron microscopy, and dynamic light scattering. The aging mouse model of post-ultraviolet A(UVA) exposure manifested decreased dermal thickness and VEGF expression and increased collagen production compared with the control group, which indicated a promising effect of HADSCs-CM in skin aging.

However, there are still some limitations in this study. Firstly, the research does not pay much attention to the long-term efficacy and safety of the exosomes, which is vital for therapeutic applications on humans. Secondly, it does not involve the research of mechanisms. Further effort should focus on the significant pathways of skin aging, such as proteostasis (ubiquitin-proteasomal system and autophagy-proteasomal system), inflammation mediator (NF-κB and KEAP1-NRF2-ARE), and cell apoptosis (ATG5).[2,3] Lastly, the effect of HADSCs-CM can be verified in other skin aging models for broader and solid evidence. For example, D-galactose-induced skin aging mouse and naturally-aged mouse are more convincing in mimicking natural skin aging.[4]

In conclusion, the work by Li et al provides novel insights into the application of HADSCs-CM for skin aging. However, further study should focus on the long-term efficacy and safety and functional signaling pathways of skin aging, which will lay a solid foundation for the clinical applications of HADSCs-CM.

Disclosure

The authors report no conflicts of interest in this communication.

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