

ATOPIC ECZEMA/DERMATITIS

STEM CELL-DERIVED EXOSOME AND SKIN

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Introduction: Exosomes are one of the most important mechanisms for intercellular communication. These days, stem cell-derived exosomes are being developed as cosmetics/cosmeceuticals and therapeutics as well. It was found that stem cell-derived exosomes can be very effective for skin rejuvenation and atopic dermatitis.

Objective: 1. To know that stem cell-derived exosomes can be used for facial aesthetic purposes. 2. To know that stem cell-derived exosomes can be a new therapeutic candidate for atopic dermatitis.

Materials and Methods: Human adipose tissue-derived mesenchymal stem cell-derived exosomes (ASC-exosomes) were used for in vitro and in vivo tests.

Results: 1. ASC-exosomes are significantly effective for skin rejuvenation. When skin cells are treated with ASC-exosomes, collagen and elastin synthesis was increased significantly. 2. ASC-exosomes are significantly effective for atopic dermatitis. When injected either intravenously (IV) or subcutaneously (SC) into NC/Nga mice, treated with house dust mite antigens, ASC-exosomes were found to reduce pathological symptoms such as clinical score, the levels of serum IgE, the number of eosinophils in blood, and the infiltration of mast cells, CD86+ and CD206+ cells in skin lesions.

Conclusions: 1. ASC-exosomes can be a novel anti-aging product for skin rejuvenation. 2. ASC-exosomes can be a novel promising cell-free therapeutic modality for AD treatment.



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