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Transcriptional regulation of the genes involved in skin-Regeneration using protein delivery-Stem Cell Conference

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Abstract

Photoaging caused by UVB-irradiation leads to extracellular matrix damage. Most of the skin aging phenomenon is due to the loss of collagen and elastin fibers in dermal layer. ICE-1 and ICE-2 are important transcription factors involved in type â… collagen synthesis. To increase type â… collagen synthesis by regulating the activity of these transcription factors, we designed the intranuclear transcription modulation domains (TMD) of ICE-1 and ICE-2 which can be delivered effectively into the nucleus by being conjugated with protein transduction domain (PTD). Overexpressed ICE-1 and ICE-2 gene through transient transfection and treatment of purified recombinant proteins, pICE-1and pICE-2 upregulated type â… collagen synthesis on UVB-damaged human dermal fibroblast. In conclusion, transcriptional regulation of type â… collagen gene by using transcription modulation domains of ICE-1 and ICE-2 may have significant anti-photoaging effects in human dermal fibroblast.

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Biography

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