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美容医療 new horizon
—幹細胞への期待—

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**Promising Effect of Mesenchymal Stromal Cell and Cell-Derived Secretome
on Cosmetic Medicine**

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Abstract

Facial cosmetics are essential for female to make them young and personally attractive, and have developed thousands of years in human history. Mesenchymal stem cells are currently shown to be effective to recover neuronal function of stroke patients with severe disability which are resistant to common treatment modalities, and now have been applied to the treatment of other intractable diseases, mostly related to aging, including skin rejuvenation. After brief introduction of mechanisms of skin aging focusing on photo-aging of sun-exposed skin, a possible application of regenerative medicine to the recovery from age-related damaged skin is discussed. Application of autologous skin-derived cultured fibroblasts and fat tissue-derived cells, including of extracellular vesicles originated from mesenchymal stem cells to aged human skin is introduced. The most important point to be solved scientifically which is thought to deprive of efficacy of cell therapy in cosmetic medicine, is how effectively to confine injected cells within the area for a few weeks and a month to exert them to produce new and young extra-cellular matrixes, such as collagen, proteoglycans and elastic fibers to recover youth in aged-skin. Further, a promising function of extracellular vesicles, particularly exosome, on skin rejuvenation will be introduced based on recent scientific reports published. Innovative cosmetics are expected to support and enhance the efficacy of stem cell and stem cell-derived extracellular vesicles-induced rejuvenation of aged and photo-aging skin.

Key words: cosmetics, stem cell, skin rejuvenation, cell niche.