Identification and Characterization of Intraoral and Dermal Fibroblasts Revisited

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Abstract

Background: Fibroblasts are the common cells used in clinical regenerative medicine and dentistry. These cells are known to appear heterogeneous in vivo. Previous studies have only investigated the biological properties of these cell subpopulations in vitro. Despite sharing similarity in their spindle-shaped appearance, previous literatures revealed that they play distinguished functional and biological activities in the body.

Objective: This paper highlights the similarities and differences among these cell subpopulations, particularly between intraoral fibroblasts (human periodontal ligament, gingival and oral mucosa fibroblasts) and dermal fibroblasts based on several factors including their morphology, growth and proliferation rate.

Results: It could be suggested that each subpopulation of fibroblasts demonstrate different position specified gene signatures and responses towards extracellular signals. These dissimilarities are crucial to be taken into consideration to employ specific methodologies in stimulating these cells in vivo.

Conclusion: A comparison of the characteristics of these cell subpopulations is desired for identifying appropriate cellular applications.

Keywords

Author Keywords: Dermal fibroblast; differences; gingival fibroblast; oral mucosa fibroblast; periodontal ligament fibroblast; similarities

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