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Decellularized Human Gingival Stroma (DHGS) as a Bioscaffold for Using in
Gingival Tissue Engineering.

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Abstract

Over the last decade, significant advances have been made in the oral cavity tissue-engineering and also preparation of bioscaffolds for implanting in oral cavity. Given the importance of the gingiva in protecting the teeth from damage of penetration of bacteria or foreign agents on the one hand and the lack of a suitable scaffold for grafting gingival tissue on the other, it seems attempt to provide a scaffold for using in gingival tissue engineering is necessary.

In order to provide DHGS SDS 1% for 24 h and Triton X100 1% for 6 h, was used. Obtained structure was evaluated by optic and scanning electron microscopy. Optic microscopy studies have shown that obtained structure has completely been decellularized. SEM studies indicated that collagen fibers have been protected. Finally, Human Dermal Fibroblasts (HDFs [p27]) were cultivated on DHGS for 2 weeks, and then evaluated by microscopic studies. Cultivated HDFs could stay viable and also migrated into scaffold during the cultivation time.

Therefore, we demonstrated decellularized human gingival stroma (DHGS) can be a suitable bioscaffold for using in gingival tissue engineering. In addition, because of high concentration of collagen in gingival stroma, this bioscaffold can be used as a field for studying the fibroblast behaviors during wound healing process.

Keywords: human gingival stroma, bioscaffold, decellularization, tissue engineering.