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Characterization of the supracrestal gingival connective tissue in rat so as to establish a small animal model for periodontal regeneration study

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There is a constant need for a simple, predictive and inexpensive preclinical model for testing therapeutic agents in periodontal diseases. Recently, S Jacob & S Nath concluded in their review article that the rat gingival model is cheaper compared to other inflammatory models, but more research is required to confirm whether the proposed use of rat gingival tissues for drug testing is valid and feasible. In that view, we histologically characterized the connective tissue of the supracrestal connective tissue in adult Sprague-Dawley rats, both qualitatively and quantitatively. Mild decalcification procedures were utilized to preserve the morphology of tissue components. The results showed that qualitatively the cellular and extracellular matrix morphology were well preserved compared to non-decalcified gingival tissue biopsies (no hard tissues). Histomorphometrically, the total amount of collagen, collagen directionality and organization, ratio collagen I/collagen III and cellularity were not significantly different with the decalcification procedure, allowing then to maintain the tooth in situ for a more complete investigation of the healing performance.

Biography

Antoine Alves is a Senior Pathologist and Medical Research Manager at NAMSA Lyon, France. He has more than 15 years of experience at NAMSA providing interpretation of tissue/implant interaction according to international standards under GLP conditions. Development of new histopathology procedures for adequate evaluation of medical devices and advanced therapies is one of his lines of research. He has published many papers and book chapters.

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