

Accepted Manuscript

Title: Periodontal materials and cell biology for guided tissue and bone regeneration

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PII: S0940-9602(17)30153-X
DOI: <https://doi.org/doi:10.1016/j.aanat.2017.11.007>
Reference: AANAT 51206

To appear in:

Received date: 3-7-2017
Revised date: 7-10-2017
Accepted date: 15-11-2017

Please cite this article as: Andrei, M., Dinischiotu, A., Didilescu, A.C., Ionita, D., Demetrescu, I., Periodontal materials and cell biology for guided tissue and bone regeneration, *Annals of Anatomy* (2017), <https://doi.org/10.1016/j.aanat.2017.11.007>

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Periodontal materials and cell biology for guided tissue and bone regeneration

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Abstract

The present review is intended to find links between periodontal materials of the dentomaxillary apparatus and cell biology at the beginning of a century fraught with various forms of periodontal diseases and needing new treatment strategies. The manuscript has two different parts. The first describes the anatomy of tooth supporting structures, as well as related pathologies. The second part is related to cell and molecular biology in the context of periodontal regeneration.

Keywords

Periodontitis; Osseointegration; Stem cells; Intercellular signaling peptides and proteins

1. Introduction

In a century of dramatic population aging, periodontal diseases are more frequently encountered. Due to the destructive potential of periodontal pathogens, the need for protection and treatment of periodontal tissues is increasing. Starting in the last decade of the previous century when Langer and Vacanti (Langer and Vacanti, 1993) proposed tissue engineering as a concept

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