

## PERIOPREDICTOR

### PATENTS

**P201730994- Periopredictor**

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**Owner:** University of Santiago de Compostela

**Inventors:** Inmaculada Tomás Carmona; José Carlos Balsa Castro

### BACKGROUND

Traditional clinical criteria for diagnosis/prognosis of chronic periodontitis are often inadequate for: 1) determining sites of active disease; 2) measuring the degree of susceptibility to future progression; or 3) monitoring quantitatively the response to therapy. As a result, one of the major challenges in the field of Periodontology is to determine biomarkers for screening and predicting the early onset of periodontitis or evaluating the disease activity as well as the efficacy of therapy (diagnostic or prognostic tests).

### ACHIEVEMENTS & RESULTS

Our research results revealed an outstanding predictive accuracy of chronic periodontitis based on multivariate predictive models generated from the levels in oral fluids of different combinations of pro-inflammatory cytokines (IL1alpha, IL1beta and IL17A) and anti-inflammatory cytokines (IFNgamma, IL2, IL12p70, IL3, IL4, IL5, IL10 and IL3). In one particular example, these combinations of cytokines showed an excellent ability to discriminate ( $\geq 93\%$ ) the presence of chronic periodontitis with respect to a gingival/periodontal health situation, and a sensitivity and specificity  $\geq 90\%$  in most combinations. These models are supported by the well-known biological role of the cytokines involved in the pathogenesis of chronic periodontitis and demonstrates that cytokines could be very good biomarkers when it comes to distinguishing patients with chronic periodontitis from periodontally healthy individuals.

### IDENTIFIED PURPOSES & ADVANTAGES

According to our scientific findings, we propose the development of a diagnostic/prognostic procedure based on oral fluid levels of different combinations of pro-inflammatory and anti-inflammatory cytokines for the diagnosis of periodontal diseases, their progression and their response to different interventions therapeutics. Among the advantages of this technological development, we emphasize: 1) to have innovative diagnostic tests based on cytokine levels, objectively quantifiable in oral fluids, focused on the early recognition of the microbial challenge to the host, detecting real-time changes in the periodontium; 2) to have innovative diagnostic tests based on cytokine levels, which initially fulfills the two main characteristics of an ideal test. These characteristics are: outstanding predictive capacity of the clinical condition to identify with values approaching 100%, and possibility to achieve this high prediction with only one or two cytokines, which facilitates substantially its process of development.

### DEVELOPMENT COLLABORATION OFFER

If this offer is of your interest or you need more information about it, please contact us. This offer can be materialized in a "**Partnership Agreement**" to adapt this technology to your research areas, or in a "**License Agreement**" to use this patent directly.

### Contact:

*Innovation and Technology  
Transfer Office*

**Tlf.** +34 881 815541

**E-mail:**

[montserrat.camina@usc.es](mailto:montserrat.camina@usc.es)



Edificio EMPRENDIA  
Campus Sur S/N  
15782  
Santiago de Compostela  
Spain