



## Identification of *TEM*, *CfxA*, *TetM* and *TetQ* genes in periodontic infections

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Periodontitis is one of the most common diseases in dentistry. Black-pigmented, gram negative oral anaerobes such as *Porphyromonas gingivalis* and *Prevotella intermedia* are thought to be pathogens in adult periodontitis. Antibiotherapy is usually needed in the treatment of periodontitis, but treatment is often inappropriate leading to bacterial resistances, a serious problem in dental practice.

Consequently, identification of resistance genes in these microorganisms is crucial, to allow prescription of specific antibiotics. This study identified bacterial species by PCR as well as their antibiotic resistances.

Identification of *Porphyromonas gingivalis* and *Prevotella intermedia* was performed according with Ashimoto et al. (1996). Identification of *TetM*, *TetQ* and *TEM* genes was done according with Koukos et al. (2014) and the *cfxA* gene according with Handal et al. (2005).

*Prevotella intermedia* represented 44% and *Porphyromonas gingivalis* 20% of total isolates. Remaining 36% strains belonged to other black-pigmented species. Concerning the antibiotic resistance genes, it was seen that 8% of isolates had one of the tetracycline resistance genes (*TetQ* or *TetM*). *CfxA* gene was detected in 2% and *TEM* gene in 30% of strains. Strains with tetracycline (*TetQ* or *TetM*) resistance genes also harboured the *TEM* gene.

*Prevotella* sp. was the most prevalent bacterial species found in periodontic infections, as expected. Most strains (64%) with the *TEM* gene were identified as *P. intermedia* and only 7% of identified *P. gingivalis* had one of the analyzed resistance genes. No tetracycline resistance gene was observed in *P. gingivalis* strains.

Ashimoto A. et al. (1996). *Oral Microbiol Immunol*. 11:266-273.

Handal T. et al. (2005). *FEMS Microbiology Letters*. 242:319-324.

Koukos G. et al. (2014). *The Open Dentistry Journal*. 8:257-263.

**Biography:** Associate Professor of Biochemistry and Genetics at the Faculty of Health Sciences of the University Fernando Pessoa. PhD in Biotechnology by the Superior School of Biotechnology of the Portuguese Catholic University and degree in Biochemistry by the Faculty of Sciences of the University of Porto. Integrated member of CEBIMED (Centre for Studies in Biomedicine) of the FP-ENAS (Research Unit in Energy, Environment and Health of the Fernando Pessoa University). She has published several books in national publishers and papers in international scientific journals in the area of Biochemistry, Genetics and Health Sciences.

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