

**TITLE:** EVALUATING OF VIRULENCE FACTORS GENES OF CANDIDA BIOFILM ON CPC-CONTAINING DENTURE ACRYLIC RESIN.

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**ABSTRACT:**

Oral candidoses affect a large number of persons worldwide. It is associated with denture wearing and contributed by poor hygiene habits. The incorporation of antiseptic agents into prosthetic bases have been proposed as a preventive and therapeutic method of these pathological processes. This study examined genic modulation looking at virulence factors genes in *Candida* biofilms, grown on denture acrylic resin specimens containing the antimicrobial cetylpyridinium chloride (CPC). Acrylic resin specimens (50mm diameter) containing 0.01 g (0.002% w/w) and 0.10 g (0.02% w/w) CPC were fabricated. The specimens were contaminated ( $1 \times 10^6$  CFU/mL) by *Candida albicans* (ATCC 90028), *Candida glabrata* (ATCC 2001) and *Candida tropicalis* (ATCC 750) strains in sabouraud dextrose broth. After 48 hours at 37°C the attached biofilms were removed from disk surfaces by sonication. The resulting suspension was directed to RNA extraction. The cDNAs were prepared from 100 ng of total RNA samples using the reverse transcriptase enzyme SuperScript III<sup>®</sup>. It was evaluated the genes: ALS1, ALS3 and HWP1 (*Candida albicans*); ERG11 (*Candida glabrata*); SAPT1 - 4 (*Candida tropicalis*). ACT1 and RIP genes were used to normalize polymerase chain reactions (PCR) results. The conventional PCR was carried out in 0.2 mL PCR tubes in a total volume of 25 µL. PCR cycling was conducted under standardized conditions and appropriate negative controls were included in each test run. After amplification the samples were evaluated by agarose gel electrophoresis. The expression of most of the potential virulence factors genes evaluated in this study was not identified. Only SAPT3 gene, in *C. tropicalis*, was it observed, with decreased expression in the samples in contact with specimens containing 0.10 g CPC. The results suggest that CPC presence does not interfere with the virulence mechanisms, showing that the material is promising, under the studied conditions.

**Keywords:** Denture-related stomatitis, biofilm, cetylpyridinium chloride, Candida, gene expression analysis.

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