

PhD in Biomedical Sciences

Title: DEVELOPMENT OF A COMPOSITE RESIN WITH G-IEMA AND ANTIMICROBIALS PROPERTIES

The incorporation of antibacterial agents in composite resins in order to inhibit the binding of bacteria to the surface of the material and prevent or reduce plaque formation and with it marginal microleakage and caries recurrence, has been studied in recent years (Namba et al., 2009).

The changes in the restoration materials with the aim of conferring antibacterial properties can be performed through modifications in the resin matrix or at the level of its particles, and the drugs added to the resin may be released over time or, remain immobilized and exert their antibacterial activity by contact with microorganisms (Namba et al., 2009). The method of incorporating drugs that are released from the resin over time has focused on the release of low molecular weight antibacterial molecules incorporated into these materials, such as antibiotics, chlorhexidine, zinc ions, silver ions, fluorides and quaternary ammonium compounds (Weng et al., 2012).

The aim of this work is to develop a composite resin replacing the Bis-GMA monomer by second generation dendrimers, namely G-IEMA, functionalized with antimicrobial agents.

Keywords:

Composite resins; G-IEMA; Antimicrobial properties; nanoparticles

Publications (doi)

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