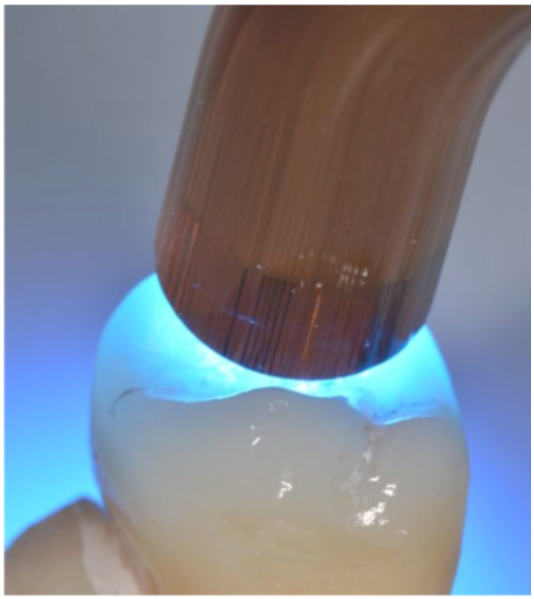
PHOTOPOLYMERIZABLE ANTIBACTERIAL MONOMER

The present invention relates to a photopolymerizable antibacterial monomer suitable for use in dentistry.



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Biomedical
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Brief description

It is a new family of molecules with antibacterial properties, capable of being easily and effectively used as antibacterial monomers in a wide range of adhesive resins for dental use, without cytotoxic effects at the concentrations used and without compromising the mechanical properties of the resins after photopolymerization.

Innovative aspects

One of the critical issues in restorative dentistry is the presence of bacteria in the oral biofilm, which are involved in the development of secondary caries and the demineralization of enamel and dentin at the margins of restorations. To this end, new restorative materials containing antibacterial compounds have been developed. These compounds can copolymerize with the methacrylate monomers commonly used in dentistry, leading to the formation of a polymer network with antimicrobial properties.

Main Advantages

- ✓ It is biocompatible.
- ✓ It is antimicrobial.
- ✓ It does not alter the color of the polymeric material with which it is mixed.
- ✓ It is effective even at low concentrations: 0.75-1.25%
- ✓ It can be integrated into adhesive systems and composite materials for dental use.
- ✓ It is soluble in ethanol, acetone, water, and isopropanol.

Potential market

One of the strengths of this invention lies precisely in the ease of including the molecules covered by this patent in the most common restorative dentistry products. Several companies producing dental materials could be interested in and benefit from this patent.

Development status

The research demonstrates feasibility. The concept is proven with a mock-up that reproduces the analytical expectations.

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