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Preparation and characterization of a novel biological nanosilver fluoride synthesized using green tea extract

ABSTRACT. Green tea extract was used to synthesize silver nanoparticles (AgNPs); sodium fluoride was added at the end of the synthesis. Change of colour confirmed the reduction of the silver ions; the formation of AgNPs was confirmed by the appearance of a broad absorption peak at 420 nm. Scanning electron microscopy (SEM) showed that the AgNPs were spherical and their average size was corroborated by dynamic light scattering (DLS) as 8 nm; their zeta potential indicated high stability. The advantage of this "green" method of synthesis of nanosilver fluoride for applications in the dental field, especially in paediatric dentistry, is the absence of hazardous chemicals.

Keywords: biological, denistry, green tea extract, nanosilver fluoride

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