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## Evaluation of bacterial laser fluorescence in human dentin following treatment with oxidizing agents

**Jonathan Hong-Man Sin and Roy George**

Griffith University, Australia

Over the past decade, laser technology has gained interest in dentistry as it allows the clinician to use this technology for a number of applications. Recently there have been attempts to modify laser tips for bacterial detection in the root canal system. The ability to quantify the presence of bacteria can allow clinicians to ascertain the suitability of the canals to be obturated. Since oxidizing agents are used as endodontic irrigants to disinfect the root canal, it is necessary to investigate into the ability of laser diagnostic devices to detect bacterial presence following the use of these irrigants. Thirty (30) sterilized extracted molars with unrestored anatomical crowns were used for this study. The teeth were debrided and embedded in acrylic resin and sectioned mesiodistally in 2 mm uniform thickness sections. They were then assigned to one of the two groups, infected and uninfected dentin, with sections in infected dentin group cultured with bacterial biofilm and evaluated using fluorescence microscopy. A calibrated DIAGNOdent (KaVo) hand-held device was used to test each section three times at the same spot with a custom made non-transparent jig and the readings averaged. The data were then analyzed for normality and subjected to post-hoc tests. This study shows that oxidizing agents can influence to some extent the fluorescent properties of dentin. This study will hopefully assist in the development of a reliable fluorescence detection technique, ultimately facilitating bacterial removal and endodontic treatment success.

jonathan.sin.aus@gmail.com