

Antimicrobial Photoinactivation Using Visible Light Plus Water-Filtered Infrared-A (VIS + wIRA) and *Hypericum Perforatum* Modifies *In Situ* Oral Biofilms

Andreas Vollmer¹, Ali Al-Ahmad¹, Aikaterini Argyropoulou², Thomas Thurnheer³, Elmar Hellwig¹, Thomas Attin³, Kirstin Vach⁴, Annette Wittmer⁵, Kerry Ferguson⁶, Alexios Leandros Skaltsounis², Lamprini Karygianni^{3*}

¹Department of Operative Dentistry and Periodontology, Center for Dental Medicine, Albert-Ludwigs-University, Freiburg, Germany

²Department of Pharmacognosy and Chemistry of Natural Products, Faculty of Pharmacy, National and Kapodistrian University of Athens, Athens, Greece

³Clinic for Conservative and Preventive Dentistry, Center of Dental Medicine, University of Zurich, Switzerland

⁴Institute for Medical Biometry and Statistics, Center for Medical Biometry and Medical Informatics, Albert-Ludwigs-University, Freiburg, Germany

⁵Institute of Medical Microbiology and Hygiene, Albert-Ludwigs-University, Freiburg, Germany

⁶Botanical Innovation, Unit 2, 390 Clergate Road, Orange, NSW 2800, Australia

Running Title: Antimicrobial Photoinactivation of Oral Biofilms

***Corresponding author:**

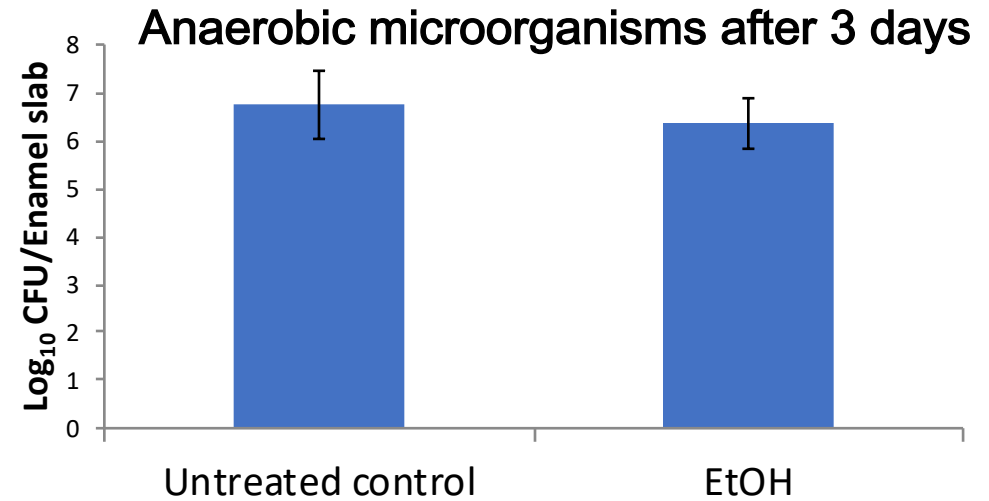
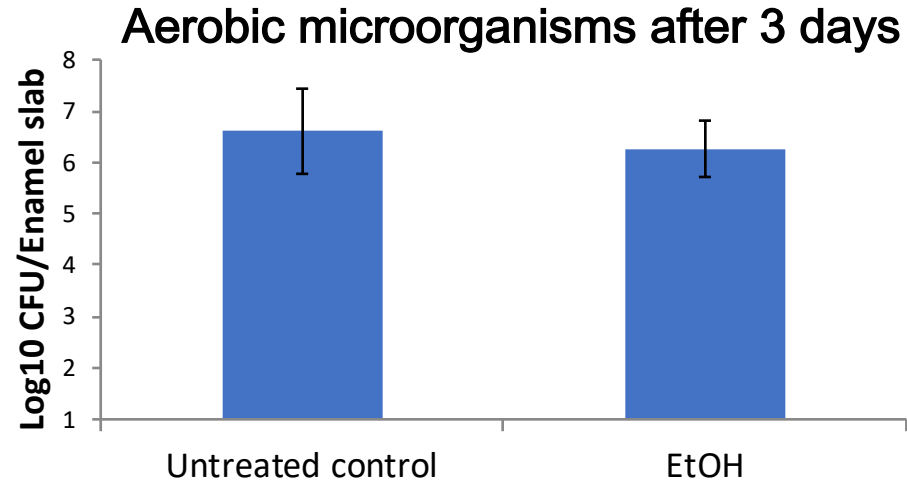
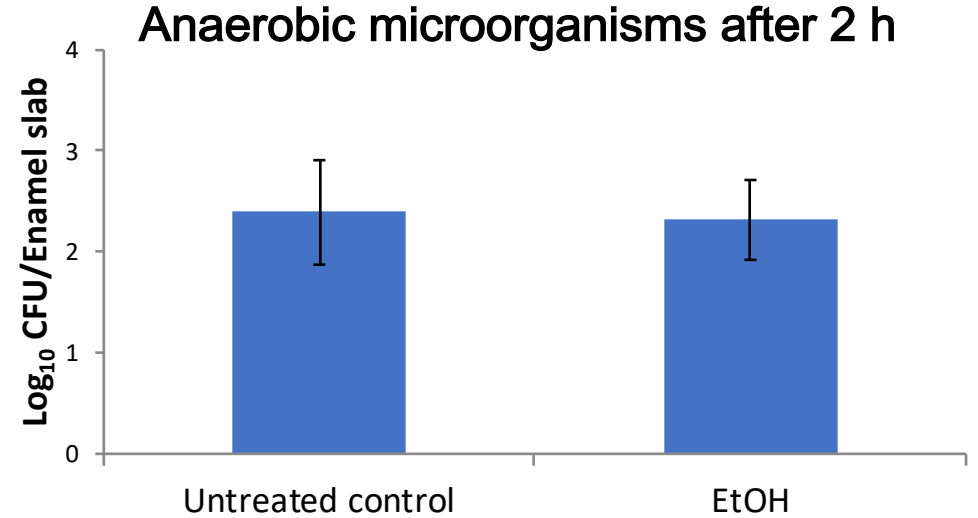
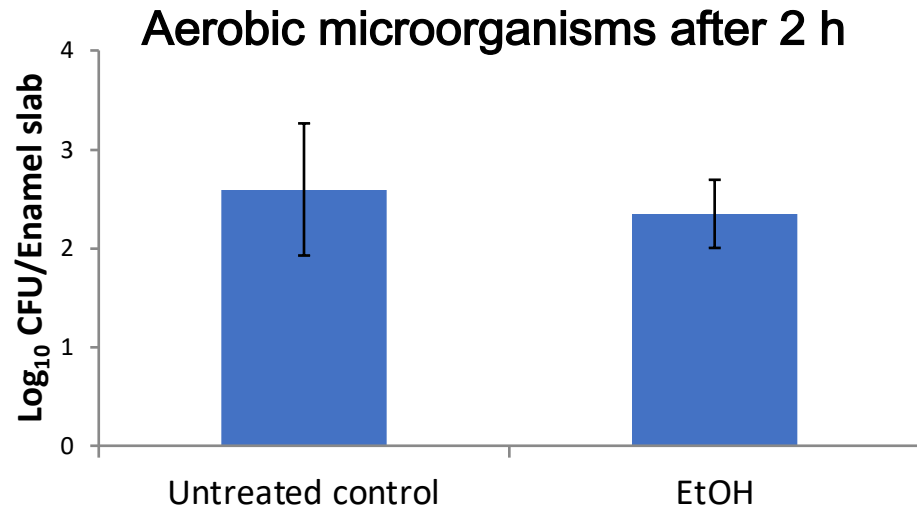
Lamprini Karygianni

Clinic for Conservative and Preventive Dentistry, Center of Dental Medicine, University of Zurich, Switzerland

Phone Number: 0041 44 634 3275

E-mail: lamprini.karygianni@zzm.uzh.ch

Effect of alcohol on initial and mature biofilms



Supplementary Figure 1: Bar charts demonstrating the CFU values for initial (2h) and mature (3 days) biofilms treated with 16% (v:v) alcohol solution. Biofilms treated with 0.9% NaCl solution served as negative controls. Standard deviations (SD) are marked on the graphs.