Brazilian-plant extracts against *Streptococcus*-planktonic biofilm.

Ivana B. Suffredini¹², Michele Barnabé³, Maristela Dutra-Correa¹, Cintia H. C. Saraceni¹

¹ Graduate Program in Dentistry, Paulista University, São Paulo, Brazil; ² Centre for Research in Biodiversity, Extraction Laboratory, Paulista University, São Paulo, Brazil; ³ College of Dentistry, Paulista University, São Paulo, Brazil

**Keywords:** biofilm; *Streptococcus*; active plant extract; Amazon rain forest

**Objective:** To evaluate the influence of 19 Brazilian-plant extracts on the formation and integrity of *Streptococcus*-planktonic biofilm. **Experimental section:** Plant extracts were obtained from different plant organs by a 24h-maceration with dichloromethane and methanol (1:1) followed by a 24h-maceration with deionized water, and were lyophilized and stored at -20°C before use. They were prepared with 50% dimethylsulfoxide in different concentrations to be used in the assay. Zürich technique adapted for planctonic culture was used, and consisted of employing a *Streptococcus mutans* planctonic culture in 5%-saccharose brain heart infusion medium, in 24-well plates, 1 mL of the inoculated medium(IM)/well. A substratum was added/well, so the biofilm could form. IM was incubated for 16h30 at 36 °C. After that, medium was 6-times changed by a new sterile 5%-saccharose medium(5SM). Change was made each 4h so as the biofilm remained in the substratum, and after that, 5SM was added and the plate remained incubated for more 16h, totaling 64.5h of experiment. Treatments consisted in plant extract (different concentrations), chlorhexidine (CHX0.12%, 1%, 2%), Periogard®(PER) and saline, in which substrata were immersed for 3x10sec, before each medium changes (i.e., three times/day). Finally, 10-fold-dilution-count technique was applied to evaluate differences in treatments. Scanning electron microscope was used to illustrate changes in biofilm after treatments. **Results and discussions:** One-way ANOVA followed by Tukey-post-test was used to analyze differences among means (p<0.05). Positive controls significantly inhibited biofilm from expand (p<0.001). EB1779, obtained from aerial organs of *Dioscorea* sp. (Dioscoreaceae), was significantly effective against biofilm formation in relation to saline (p>0.05) and to CHX0.12% (p<0.01); did not show significant differences if compared to CHX1%, CHX2% and PER. **Conclusions:** EB1779 is potentially effective against biofilm formation. Further analyses related to its mechanism of action and to the chemical profile of the extracts are needed.