3β-6β-16β-TRIHIDROXILUP-20(29)-ENE: A PROMISING TRITERPENE WITH ANTIBACTERIAL ACTIVITY ON ORAL STREPTOCOCCI

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Biofilms are microbial communities characterized by cells attached to biotic or abiotic surfaces and embedded in a self-produced matrix of extracellular polymeric substance (EPS). Some bacterial species are able in colonizing the oral cavity and establishing themselves as biofilms. The *Streptococcus* genus is mainly involved in this process and therefore presents high importance in the pathogenesis of dental caries. Currently, the use of natural products in folk medicine has gained the attention of the pharmaceutical industry, since they can constitute as important sources of new chemotherapeutic agents. *Combretum leprosum* is a plant known by its anti-hemorrhagic and sedative properties and has been evaluated concerning its antibacterial activity. This study aimed to evaluate the antimicrobial potential of the triterpene 3β-6β-16β-trihidroxilup-20(29)-ene (CLF1) isolated from leaves of *C. leprosum* on planktonic cells and biofilms from *Streptococcus salivarius* ATCC 7073 and *S. oralis* ATCC 10557. The assays determined the minimum inhibitory concentration (MIC), minimum bactericidal concentration (MBC), and the effect of CLF1 on biomass and viability of biofilm-entrapped cells. For this purpose, bacterial cultures were seeded in BHI broth supplemented with 1% sucrose and grown in the presence of CLF1 at concentrations ranging from 62.5 to 1.95 µg/mL in 96-wells microtiter plates. The plates were then incubated at 37°C with 5% CO_2 for 24 h. The triterpene presented a MIC of 7.8 and 1.95 µg/mL, and MBC of 15.6 and 7.8 µg/mL for *S. salivarius* and *S. oralis*, respectively. Regarding biofilm mass of both strains, CLF1 reduced its formation even at the lowest concentration tested (1.95µg/ml). In addition, the viability of biofilm-entrapped cell was also reduced in approximately 60% in the concentrations of 62.5 and 31.25 µg/mL for *S. salivarius*. Interestingly, CLF1 decreased the viability of *S. oralis* at all concentrations assayed. In summary, CLF1 may be considered as a promising compound for the prevention of oral biofilm formation by oral streptococci.

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