



BIOFILMS⁷

Microbial Works of Art





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Antimicrobial potential of *Eucalyptus globulus* against biofilms of *Staphylococcus aureus* isolated from bovine mastitis

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Staphylococcus aureus are among the most common species isolated from bovine mastitis. The pathogenesis of this bacterium is facilitated by a number of virulence factors, including the ability to adhere to abiotic surfaces and/or host tissues often leading to biofilms' formation. From the clinical perspective, the most important feature of *Staphylococcus* species' biofilms is their high tolerance to the conventional antimicrobial therapy. So, the increasing number of bovine mastitis and the higher levels of *Staphylococcus* species resistance to traditional antimicrobial agents are considered an important alert for the necessity to focus the future research on identification and development of new strategies to combat *S. aureus* mastitis. Recently, the interest in natural alternatives based on plant extracts has been rising. In addition to their health benefits, their antimicrobial potential has been increasingly reported. Taking this into consideration, the evaluation of hydromethanolic extracts of *E. globulus* against *S. aureus* biofilms was tested and compared with penicillin, one of the antibiotics most often used in the treatment of cattle infections. All mastitis' isolates tested were good-biofilm producers. As expected penicillin has demonstrated poor activity against *S. aureus* biofilms (<1 log reduction). However, *E. globulus* Labill was bactericidal, promoting a biofilm cell reduction of 2-3 log. Therefore, the present work showed the potential antimicrobial activity of *E. globulus* against *S. aureus* from bovine mastitis, namely in biofilm mode of growth and drew attention to its promising use as an alternative to penicillin.