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## Gossypol and its L-ascorbyl palmitate coagel susceptibility of methicillin-resistant *Staphylococcus aureus* and *Staphylococcus epidermidis* In vitro

Mubano Olivier Clement  
Jiangnan University, China

Antibacterial resistance threatens the effective prevention and treatment of an ever-increasing range of infections caused by bacteria it is an increasingly serious threat to global public health that requires action across all government sectors and society. Therefore, the new antibacterial agents in innovative therapeutic strategies are in need in order to counteract the issue. In this study, gossypol, a polyphenolic compound from cotton seeds with several biological activities such as antiretroviral, antimicrobial, antischistosomal, antimalarial and anticancers properties, coupled with its L-ascorbyl palmitate coagel were investigated separately for their inhibiting activities against methicillin resistant *Staphylococcus aureus* (MRSA) and *Staphylococcus epidermidis* (MRSE) strains. Spectrophotometer analysis, Q count automated colony counter, disc diffusion test, agar dilution test, broth dilution test and well diffusion test were performed to obtain the results. The complete growth inhibition of tested bacteria, MRSA ATCC 43300, SA ATCC 6538, MRSA CMCC (B) 26001, MRSE ATCC 35964 and SE CMCC (B) 26069 was respectively occurred at 170  $\mu$ M, 17  $\mu$ M, 85  $\mu$ M, 85  $\mu$ M and 85  $\mu$ M. Gossypol coagel 10% (w/w) and 25 mg were respectively considered as an optimal concentration and amount to exhibit a maximum antimicrobial activity for this system. Basing on these results, gossypol and its coagel could serve as promising lead compound to develop new antibiotic and scientific basis for further development and utilization of coagels at the base of gossypol against *S. aureus* and *S. epidermidis* infections.

muboc@yahoo.fr