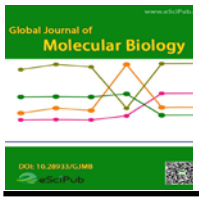
Research Article **GJMB (2018) 1:2**



Global Journal of Molecular Biology (DOI:10.28933/GJMB)

Modulation of plant extracts on the resistance of staphylococcus aureus strains to antibiotics

Amaral, J. P. D.1; M agalhães,L. P. M. 2; Oliveira, C. V. J. 3; Lima, C. S.A. 4; R Yara, R. 4; Sena, K. X. F. R 5

1Student of the Biomedicine Course, UFPE; 2Student of the postgraduate program in Pharmaceutical Sciences, UFPE; 3 Student of the postgraduate program in Biological Sciences, UFPE; 4Teacher/Researcher of the Department of Biophysics, UFPE. 5Teacher/Researcher of the Department of Antibiotics, UFPE

ABSTRACT

Introduction:The increase in bacterial resistance has generated the need to increase research for the discovery of new drugs, and medicinal plants are a proven source of bioactive products with great therapeutic potential. Objectives: To analyze the modulating activity of the ethanolic extracts of cumaru, angico, artemisia, terramicina and espinheira in front of strains of Staphylococcus aureus. Methods: Modulating activity was determined by the disc diffusion method, analyzing three strains of multiresistant Staphylococcus aureus with the antibiotics erythromycin, vancomycin, clindamycin, oxacillin, gentamicin, chloramphenicol, cipropofloxacin and cefoxitin. Each antibiotic disk was soaked with 20µL of the extract. The disks were placed on the surface of the culture medium already seeded with the microorganisms and incubated at 35 ° C for 24 hours. The diameters of inhibition halos (HI) were measured in mm and compared to those determined by HI of the antibiotics alone. The increase in HI diameter ≥ 2 mm, synergistic effect; antagonistic effect when the HI diameter was smaller than that of the isolated antibiotic; and, indifferent effect, when the increase in HI diameter <2 mm in relation to the antibiotic alone. Results and Discussion: The crude extracts evaluated were able to modulate the activity of different antibiotics of clinical use by means of synergistic, indifferent or antagonistic actions. For the UFPEDA 707 strain of Staphylococcus aureus, were observed 45% of synergism, 35% of indifference and 20% of antagonism. Analyzing the responses with Staphylococcus aureus UFPEDA 728, 25% of synergistic effects, 30% of indifferent effect and 45% of antagonistic effect. In contrast to Staphylococcus aureus UFPEDA 732, synergism occurred in 35%, indifference in 50% and antagonism in 15%. Conclusions: The extract that was able to modulate the activity of the antibiotics with the synergic effect for the three isolates tested was the ethanolic extract of angico.

Keywords: Medicinal plants; Modulation; Staphylococcus aureus

***Correspondence to Author:**
Amaral, J. P. D.
Student of the Biomedicine Course, UFPE

How to cite this article:
Amaral, J. P. D; M agalhães,L. P. M.; Oliveira, C. V. J.; Lima, C. S.A.; R Yara, R.; Sena, K. X. F. R .Modulation of plant extracts on the resistance of staphylococcus aureus strains to antibiotics. Global Journal of Molecular Biology, 2018, 1:2

eSciPub LLC, Houston, TX USA.
Website: http://escipub.com/