

TITLE: IN VITRO EVALUATION OF THE ANTIMICROBIAL CAPACITY OF COMPOUNDS BELONGING TO HYDRAZONES CLASS AGAINST CLINICAL ISOLATES OF *Staphylococcus* spp.

AUTHORS: SOUZA, N. M.S.; LUNA, L. A.; SOUZA, R. F. S.; FREIRE, D. P.; ARAUJO, C. R. M.; COSTA, M. M.

INSTITUTION: UNIVERSIDADE FEDERAL DO VALE DO SÃO FRANCISCO – UNIVASF, PETROLINA, PE (RODOVIA BR 407, 12 LOTE 543 - PROJETO DE IRRIGAÇÃO NILO COELHO - S/N C1, CEP 56300-000, PETROLINA - PE, BRAZIL)

ABSTRACT

In Brazil, the casuistry of dermatological diseases in both companion animals and humans has a high number. Among these diseases, pyoderma is among the major and is caused by bacteria, affecting dogs, cats and humans. This dermatopathy is caused by the bacterium *Staphylococcus pseudintermedius*. Due to the increasing microbial resistance to the antibiotics used in skin infections, it has caused a need to develop studies aimed at finding alternative substances to combat these pathogens. Hydrazones are a class of organic compounds that have gained prominence in research, mainly for its wide variety of functions, among them being the fungicide, antitumor and antimicrobial. The objective of this study was to evaluate the *in vitro* antimicrobial potential of hydrazones on *Staphylococcus* spp. collected from cats, dogs and humans, and a standard ATCC strain. For this purpose, strains of cats and dogs from the University Veterinary Hospital (UVH) and humans from the Emergency and Trauma Hospital (ETH) of UNIVASF were used. These samples were allocated in the bacterial collection of the Laboratory of Animal Microbiology and Immunology (UNIVASF). The seven hydrazones tested were identified as DHV-1, DHV-2, DHV-3 and DHC-4 to DHC-7. To determine the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC), the broth microdilution technique was used. The hydrazones presented antimicrobial potential with activity between 150 µg/mL and 75 µg/mL for MIC and MBC, except for DHC-7 hydrazone that did not show activity. Individual variations were considered among the 6 substances that presented MIC and MBC in relation to the different isolates; however, none of them showed activity for all four strains at the same time. In conclusion, the substances studied have antimicrobial potential against *Staphylococcus* spp. isolates, except for DHC-7.

KEYWORDS: Antibiotic, dermatopathy, MBC, MIC, resistance.

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