

TITLE: IN VITRO ACTION OF EUCALYPTUS PYROLIGNEOUS EXTRACT (EUCALYPTUS SP.) ON *STAPHYLOCOCCUS PSEUDINTERMEDIUS* ISOLATES FROM CANINE PYODERMA

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ABSTRACT:

The pyroligneous extract (EPL) is an organic substance resulting from the condensation of smoke generated by the carbonization of wood during the charcoal production process, presenting several oxygenated compounds such as carboxylic acids, esters, ethers, ketones, in addition to phenol, guaiacol, and phenolic derivatives. EPL has aroused interest in several areas, including medicine and pharmaceuticals, in addition to agronomics and food, for different applications, and has been used as an antiseptic, anti-inflammatory and anti-allergic agent. Additionally, in small animal clinics, skin infections tend to recur, which requires long-term antimicrobial therapy, with *Staphylococcus pseudintermedius* being the most commonly isolated agent in dogs with pyoderma. However, recent studies have indicated an increase in cases of pyoderma caused by methicillin-resistant *S. pseudintermedius*, as well as by those with multidrug resistance. In order to test new compounds with antimicrobial potential in the treatment of pyoderma in small animals, assays to determine the minimal inhibitory (MIC) and minimal bactericidal (MBC) concentrations were carried out, using EPL at different concentrations, for 15 clinical isolates of *S. pseudintermedius* associated with canine pyoderma (CEUA: nº 0149/2018), including 3 multiresistant strains. EPL was also tested by disk-diffusion on Mueller Hinton (MH) agar, in conjunction with other antimicrobials. The concentrations determined for MIC and MBC were, respectively, 3.33 (v/v) and 12.5 (v/v), not observing differences between the multiresistant *S. pseudintermedius* strains and the other *S. pseudintermedius* strains tested. In the agar disk-diffusion test, paper disks soaked in EPL at 3 different concentrations (v/v) (50, 25 and 12.5) were used, but inhibition halos were not observed, indicating a possible limitation in the diffusibility of the EPL on MH agar. EPL showed bacteriostatic and bactericidal effects against *S. pseudintermedius* isolates. Further studies are needed to better determine the potential use of the compound in the treatment of canine pyoderma, especially in topical presentations.

Keywords: antimicrobial agent, eucalyptus, pyroligneous extract.

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