

Isolation, Characterization and Antibacterial Evaluation of antimicrobial peptides, derivatives from fly larvae *Sarconesiopsis magellanica* (Diptera: Calliphoridae)

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Introduction: *Sarconesiopsis magellanica* is a medically important necrophagous fly used for establishing the post-mortem interval. The most important mechanism for combating infection using larval therapy depends on diverse proteins and peptides contained in larval excretion and secretion (ES). These larvae are protected against infection by diverse antimicrobial peptides (AMPs), one already known as lucifensin. Special interest in these peptides has also been aroused regarding understanding their role in wound healing. The action of larvae on wounds occurs through 3 mechanisms: removal of necrotic tissue, stimulation of granulation tissue and antibacterial action of ES. The *Lucilia sericata* fly larvae have been the most used, however, we need to find potentially more effective new species. **Objectives:** This study was thus aimed at identifying and characterizing *S. magellanica* AMPs contained in ES for the first time, and comparing them with the common fly used *L. sericata*. **Material and Methods:** These products were obtained from third-instar larvae taken from a previously established colony. ES fractions were separated by Sep-Pak C18 disposable columns. The material obtained was fractionated by RP-HPLC by using Jupiter C18 semi preparative column. The products were then lyophilized and their antimicrobial activity was characterized by incubation with different bacterial strains. **Results and Discussion:** The first chromatographic analysis of ES from *L. sericata* gives 6 fractions with antimicrobial activity against Gram positive bacteria *Micrococcus luteus*, and 3 fractions with activity against Gram negative bacteria *Pseudomonae aeruginosa*, while the one from *S. magellanica* gives 1 fraction against *M. luteus* and 4 against *P. aeruginosa*. Maybe one of these fractions could correspond to the peptide already known from *L. sericata*. **Conclusions:** These results show the first work for supporting further experiments aimed at validating *S. magellanica* use in larval therapy. Further studies are necessary to identify and characterize them to better understand their functioning.

Keywords— Antimicrobial peptides, larval therapy, *Lucilia sericata*, *Sarconesiopsis magellanica*.