# ANTIMICROBIAL PEPTIDES IN THE HEMOLYMPH OF THE SPIDER *ACANTHOSCURRIA RONDONIAE*

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Antimicrobial peptides are an extremely diverse group of small proteins that are considered together because of their native antimicrobial activity and are important components of the vertebrates and invertebrate immune system. The widespread occurrence of these antimicrobial substances suggests that they play a role in innate immunity against microorganisms and other pathogens. It is has become increasingly clear that due to the development of antibiotic-resistant microbes, antibacterial and antifungal peptides have attracted the attention in recent years, in order to find new therapeutic agents. The objective of this study was to identify antimicrobial peptides in the hemolymph of the *Acanthoscurria rondoniae* spider. In order to perform peptide isolation, hemocytes were initially separated from plasma by centrifugation. Acid extract of hemocyte and plasma were subjected to pre-purification step by solid phase extraction (Sep-pak C18, Millipore) and eluted with different concentrations of acetonitrile (5%, 40% and 80% ACN). The 40% ACN fraction of hemocytes and plasma was applied to reversed-phase chromatography (RP-HPLC), using a Jupiter semi preparative C18 column. Five fractions, three in hemocytes and one in plasma, with antimicrobial activities were detected. These fractions were characterized by Mass Spectrometry (ESI-MS). A peptide of plasma with antifungical activity was sequenced and synthesized. This peptide presented vasoconstriction activity, increase of the leukocyte rolling and didn't show hemolytic activity. Molecules of the hemocytes showed antimicrobial activity and molecular mass similarity with gomesin, mygalin and acanthoscurrin of *A. gomesiana.* They will be sequenced to verify if is the same molecules. The identification and characterization of new antimicrobial substances may allow the development of the new drugs for killing resistant pathogenic microorganism.

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