Evaluation of Antimicrobial Activity of Peptide Ocellatin-K1 and their Derivatives Synthetics


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With the appearance of microorganisms resistant to current antibiotics, it is essential to search compounds that may act as new drugs to be used in combating infectious diseases. The objective of this study was to evaluate the potential antimicrobial peptide Ocellatin-K1, originally identified in the secretion of frog, and their synthetic derivatives. For this purpose, the peptides were incubated with Staphylococcus aureus ATCC 25923, Escherichia coli ATCC 25922 and Klebsiella pneumoniae ATCC 13883 and evaluated by methods diffusion in disk and wells. In the test diffusion wells just the Ocellatin-K1 showed antimicrobial activity, but only against gram-negative bacteria (E. coli and K. pneumoniae). The zone of inhibition of ocellatin-K1 was 14 and 12 mm for K. pneumoniae and E. coli, respectively. S. aureus showed to be resistant to all peptides tested. In diffusion test in disc both ocellatin-K1 and its derivatives did not show antimicrobial activity. Such fact may be related to the amount of sample used, once the paper disc filter is impregnated with a very small fraction of the peptides. Thus, there is a potential promising, these bactericidal peptides found in the skin secretion of Leptodactylus knudseni, native to the Amazon region, which should be further explored scientifically. This study was authorized by CGEN/CNPq (010627/2011-1) and IBAMA (27131-2).

Key Words: bacterium, resistance, microbicidal activity, synthetic peptides, ocellatin, frog

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