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EXTRACTION AND IDENTIFICATION OF ANTIMICROBIAL PEPTIDES FROM THE CANASTRA  
ARTISANAL MINAS CHEESE

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ABSTRACT

Canastra artisanal Minas cheese samples were collected in Minas Gerais –Brazil. The samples were evaluated in order to observe the presence of antimicrobial peptides during 30 days of ripening. Soluble peptides extracted from the cheeses were fractionated by reverse phase liquid chromatography and their fractions evaluated for inhibitory action of *E. coli*. Fractions containing antimicrobial activity were analyzed by MALDI-TOF / TOF and then peptides were sequenced and identified using MASCOT Daemon coupled with UniProt database. The identified peptides were then validated by SCAFFOLD application. The peptides present in fractions with antimicrobial activity were RPKHPIKHQ, RPKHPIKHQG, RPKHPIKHQGLPQ and RPKHPIKHQGLPQE, HQPHQPLPPT and MHQPHQPLPPT. Peptide sequences PKHPIKHQ, RPKHPIKHQG, RPKHPIKHQGLPQ and RPKHPIKHQGLPQE were originated from  $\alpha_{s1}$ -casein and are their fragments belonging to Isracidine, which in turn is a well known antimicrobial peptide. The HQPHQPLPPT and MHQPHQPLPPT peptides were related to  $\beta$ -casein and were isolated in other studies, but their biological activities are still unknown.

Keywords: Bioactive peptide, Proteolysis, Dairy products, MALDI-TOF /TOF

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